

THE HOLY GRAIL OF **MACRO** **ECONOMICS**



LESSONS FROM JAPAN'S
GREAT RECESSION

RICHARD C. KOO

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**The Holy Grail of
Macroeconomics:
Lessons from Japan's Great Recession**

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Richard C. Koo



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To my mother

Amy Koo Ma

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Preface

Ben S. Bernanke, the current Federal Reserve chairman and a highly acclaimed academic economist, wrote in 1995 that “to understand the Great Depression is the Holy Grail of macroeconomics,” but that “we do not yet have our hands on the Grail by any means.” He added that “not only did the Depression give birth to macroeconomics as a distinct field of study, but... the experience of the 1930s continues to influence macroeconomists’ beliefs, policy recommendations, and research agendas.” Indeed, since the publication of Keynes’ *General Theory* in 1936 ushered in the era of macroeconomics, various explanations have been offered for the depression in an endeavor that, in Bernanke’s words, “remains a fascinating intellectual challenge.” It remains a fascinating challenge, because it has not been explained to this day how things had gotten so bad for so long after the October 1929 stock market crash.

With that in mind, I will argue that Japan’s “Great Recession” of the past fifteen years, to use Adam Posen’s term, has finally given us the clue to understanding how the Great Depression unfolded in the U.S. more than seventy years ago. Although history never exactly repeats itself, I believe that there are sufficient similarities between the two extended downturns to suggest that the forces that weakened the effectiveness of traditional macro policies, and lengthened the recessions were the same in both cases. It also seems that the same negative force has been operating, albeit on a

much smaller scale, in both the U.S. and German economies after the bursting of the IT bubble in 2000, and again in the U.S. after the subprime crisis that erupted in 2007.

To highlight the similarities between the two prolonged recessions that happened in two different countries more than seventy years apart, this book begins by analyzing what happened to the Japanese economy. It starts with the Japanese economy not only because the author lived through the recession, and was an active participant in the policy debate during the past fifteen years, but also because Japan offers a far more comprehensive pool of data to draw from than the Depression-era U.S. Furthermore, understanding why Japan's economy slowed so suddenly in the 1990s after being so powerful until the very end of the 1980s is a fascinating intellectual challenge in its own right.

In doing so, I use the "balance sheet recession" concept first presented in English in my earlier book *Balance Sheet Recession: Japan's Struggle with Uncharted Economics and its Global Implications* (John Wiley & Sons [Asia], 2003). It is a new concept in the sense that unlike neoclassical macro theory, which assumes that private-sector corporations are always maximizing profits, it assumes that some companies may respond to daunting balance-sheet damage by minimizing debt. After explaining the exact mechanism of the extended slowdown in Japan, I move on to see whether the same mechanism was operative in the U.S. seventy years ago. The analysis is then extended to cover the recent episodes, including the U.S. subprime crisis.

This book was written with two main objectives and one goal. First, it seeks to analyze the current state of the Japanese economy and the outlook for the future. Chapters 1 and 2 are devoted to this purpose. Although I believe that the ongoing economic recovery in Japan is real, policymakers need to keep a close eye on risks that are highly specific to this type of recovery.

My second and far more ambitious objective is to incorporate the legacy of Japan's long recession into the body of macroeconomic theory. Chapters 3 to 5 are devoted to this objective. This section extends and generalizes the balance sheet recession theory, and compares and contrasts it with conventional economic thought. The ultimate goal of this exercise, of course, is to use the lessons learned from the Great Depression and Great Recession in fighting similar economic problems that are brought about by the bursting of asset-price bubbles, especially the U.S. subprime fiasco.

Chapters 3 and 4 delve into research on the Great Depression by academic economists over the past thirty years. It was necessary to go back to the Depression because, as Bernanke's statement at the outset makes clear, so much of macroeconomics has been influenced by what happened during it.

In particular, economists from around the world advised the Japanese authorities to fight the recession with ever more drastic monetary accommodation. They based their recommendations on the past twenty-five years of research into the Depression, which has concluded that the Depression was caused by the failure of monetary policy and that the subsequent recovery of the U.S. economy was also made possible by a change in the policy stance of the Federal Reserve.

From my vantage point on the front lines of Japanese financial markets, these policy recommendations seemed utterly unrealistic, because the demand for funds from Japanese businesses has dried up completely even with zero interest rates. In my debates with these economists, however, I realized that no constructive discussion could occur until I proved that some of the "lessons" from the Great Depression that underpin their views are themselves wrong. If it can be shown that the Great Depression was, as was the Japanese recession, a balance sheet recession, and that this was why monetary policy was powerless to fight it, conventional economic theory will have to undergo some major changes.

To prove this, I had to venture into the tiger's lair, and what I found there was surprising. Examining the data from the perspective of *demand* for funds, I discovered one indicator after another that supported the balance sheet recession hypothesis. Even the classic survey of U.S. monetary history by Anna Schwartz and Milton Friedman, who were the first to argue that the Great Depression could have been avoided through the proper application of monetary policy, and who long championed monetary policy's primacy, contained many passages supporting the view that the Great Depression was actually a balance sheet recession.

While the readers will be the ultimate judges, I believe that America's Great Depression, as was Japan's Great Recession, was a balance sheet recession triggered by businesses striving to minimize debt. As in Japan, the problem lay in a lack of demand for loans in the private sector, and not in a lack of funds supplied by the monetary authorities.

Chapter 5 brings everything together and argues that there are actually two phases to an economy, the ordinary (or *yang*) phase where private sector is maximizing profits, and the post-bubble (or *yin*) phase where private sector is minimizing debt or otherwise obsessed with repairing damaged balance sheets. It goes on to argue that the two are linked in a cycle. The distinction between the *yin* and *yang* phases also explains why some policies work well in some situations but not in others. The resultant synthesis provides the crucial foundation to macroeconomics that has been missing since the days of Keynes.

Chapter 6 is about the pressure of globalization and global imbalances. Although these issues are not directly related to balance sheet recessions, they are nonetheless making the conduct of monetary policy difficult in many countries.

Chapter 7 is about ongoing bubbles and balance sheet recessions, with a special emphasis on the U.S. subprime problem. The U.S. economic downturn brought about by the subprime fiasco is a version of a balance sheet recession, with many of its unpleasant characteristics. It is also a highly dangerous recession in that so many financial institutions on both sides of the Atlantic have been badly damaged by the fiasco. Although no quick recovery is possible with so much damage to household and bank balance sheets, the lessons we learned from Japan during the past fifteen years can be put to good use to minimize the recovery time for the U.S. economy.

The appendix is my little contribution to the debate on how best to incorporate the use of money into the conventional neoclassical framework. This section also challenges some of the fundamental notions of modern economics.

Keynes responded to the tragic events of the Great Depression by inventing the concept of aggregate demand. But even he was unable or unwilling to break away from the most basic, long-held assumption of economics: that businesses everywhere and always seek to maximize profit. The Keynesian revolution ultimately ran aground because its proponents never realized that their fiscal policy recommendations worked only in the *yin* phase when businesses are striving to minimize debt.

The concept of balance sheet recession crosses the line that Keynes himself was unable or unwilling to cross, and allows for the possibility that companies may sometimes seek to minimize debt. By doing so, it fully explains economic phenomena such as

the liquidity trap and extended recessions for which no convincing explanation has previously existed. It also complements and augments the conventional theories by clearly indicating when monetary and fiscal policy are most effective, as well as when they are most counterproductive. The synthesis of economic theories so obtained may well be the Holy Grail of macroeconomics we have been searching for since the 1930s.

The balance sheet recession concept has been developed on the back of the Japanese people's suffering and sacrifices during the past fifteen years. Although a high price was paid, this concept should be of great assistance to countries seeking to formulate a policy response to bubbles and their aftermath, the balance sheet recession. In the meantime, I look forward to assistance and criticism from fellow economists to refine this theory, and make it a more useful tool, so that Japan's painful experience might be transformed into a beneficial legacy for the world.

Richard C. Koo
March 2008

Japan's Recession

The recovery in Japan's economy is real, and the signs of an end to the fifteen-year recession are finally here. But it is important to remember that both fundamental and cyclical factors affect the economy. It is only in the former area—those unique problems Japan has struggled with over the past fifteen years—that a genuine recovery is evident. Cyclical or external factors, such as exchange-rate fluctuations, pressures from globalization, especially from China, and financial turmoil in the U.S., also play a role. So although recent data give cause for optimism on the fundamental side, Japan will remain subject to cyclical fluctuations and external pressures.

Chapter 1 sets out to identify the kind of recession Japan has been through, and Chapter 2 examines the ongoing recovery in detail. Global as well as cyclical economic trends are discussed in Chapters 6 and 7.

1. Structural problems and banking-sector issues cannot explain Japan's long recession

Japan's recovery did not happen because structural problems were fixed

Much has been said about the causes of Japan's fifteen-year recession. Some have attributed it to structural problems or

to banking-sector issues; others have argued that improper monetary policy and resultant excessively high real interest rates were to blame; and still others have pointed the finger at cultural factors unique to Japan. It is probably safe to say that among non-Japanese observers, many journalists and members of the general public subscribed to the cultural or structural deficiency argument, while academics subscribed to the failure of monetary policy argument. Meanwhile, those in the financial markets subscribed to the banking problem argument as the key reason for the Japanese slowdown.

Those in the structural camp included former Federal Reserve chairman Alan Greenspan,¹ who argued that Japan's inability to weed out zombie companies must be the root cause of the problem, and former Prime Minister Junichiro Koizumi, whose battle cry was "No recovery without structural reform." Although the term structural reform could mean different things to different people, the reform Koizumi and his economic minister Heizo Takenaka had in mind was the Reagan-Thatcher-type supply-side reform. They pushed for supply-side reforms because the usual demand-side monetary and fiscal stimulus had apparently failed to turn the economy around. Late former Prime Minister Ryutaro Hashimoto, who resigned in August 1998, also pushed for structural reform as a means to get the economy going.

Structural problems were also blamed for the five-year German recession lasting from 2000 to 2005, the nation's worst slump since World War II. That the German economy responded so poorly to monetary stimulus from the European Central Bank (ECB) when other eurozone economies responded favorably supported arguments in favor of structural reforms in Germany.

Among those in the academic camp, Krugman (1998) argued that deflation was the root cause of Japan's difficulties, even adding that how Japan entered into deflation is immaterial.² To counter the deflation, he pushed for quantitative easing and inflation targets. This approach of not dwelling on the nature of deflation and jumping right into possible remedies was followed by Bernanke (2003), who argued for the monetization of government debt, and Svensson (2003) and Eggertsson (2003), who recommended various combinations of price-level targeting and currency depreciation. These academic authors argued in favor of more active monetary policy because the past three

decades of research into the Great Depression by authors such as Eichengreen (2004), Eichengreen and Sachs (1985), Bernanke (2000), Romer (1991), and Temin (1994) all suggested that the prolonged economic downturn and liquidity trap seen at that time could have been avoided if the U.S. central bank had injected reserves more aggressively.

Although all of these arguments have some merit, that prolonged recessions are extremely rare suggests that something must have been very different about this one. It is therefore critically important to identify the main driver of the fifteen-year recession. In doing so, I will first try to dispel some myths about what happened to Japan during the past fifteen years, and, in the process, examine the applicability of each of the preceding arguments in detail. I will start with the structural and banking arguments because they will lay a foundation for evaluating the remaining monetary policy and cultural arguments.

The slogan “no recovery without structural reform” was made popular by former Prime Minister Junichiro Koizumi, who stepped down in September 2006. I will be the first to admit that Japan suffers from numerous structural problems—after all, I provided some of the ideas that went straight into the U.S.-Japan Structural Impediments Initiative that President George H.W. Bush launched in 1991.³ But they could not be the primary reason the nation remained in recession for so long. I do not for a moment believe that an earlier resolution of these problems would have jump-started the Japanese economy. Nor do I think that the privatization of the highway corporations and the post office, the two primary “structural reform” achievements of the Koizumi era, had anything to do with the economic recovery we are seeing today.

How do we know that structural issues were not at the heart of Japan’s long recession? To answer this question, it is first necessary to understand the characteristics of an economy beset by structural problems.

The attempt to seek structural explanations for economic problems is not really old. It was U.S. President Ronald Reagan and British Prime Minister Margaret Thatcher who first argued that the conventional macroeconomic approach of managing aggregate demand would not solve the economic problems faced by the two countries in the late 1970s. At the time, Britain and the U.S. were veritable hotbeds of structural malaise: workers

frequently went on strike, factories produced defective products, and American consumers had begun buying Japanese passenger cars because the locally made alternatives were so unreliable. The Federal Reserve's attempt to stimulate the economy with aggressive monetary accommodation led to double-digit inflation, and the U.S. trade deficit steadily expanded as consumers gave up poorly made domestic goods for imports. This weighed on the dollar, and aggravated inflationary pressures. Higher inflation, in turn, caused a further devaluation of the dollar. When the Fed finally raised interest rates in a bid to curb rising prices, businesses began to put off capital investment. Such was the vicious cycle in which the U.S. became trapped.

Structural problems point to supply-side issues

In an economy beset by structural problems, frequent strikes and other issues prevent firms from supplying quality goods at competitive prices. Such an economy typically has a large trade deficit, high inflation, and a weak currency, which lead to high interest rates that dampen the enthusiasm of businesses to invest. Its inability to supply quality goods and services stems from micro-level (i.e. structural) problems that cannot be rectified by macro-level monetary or fiscal policy.

But mainstream economists at the time believed that the problems faced by the U.S. and Britain could be solved through the proper administration of macroeconomic policy. Many mocked the supply-side reforms of Reagan and Thatcher as "voodoo economics," arguing that these policies were little more than mumbo-jumbo, and that Reagan's arguments should not be taken at face value. Most economists in Japan also held supply-side economics in contempt, deriding Reagan's policy as "cherry-blossom-drinking economics." This appellation came from the old tale of two brothers who brought a barrel of sake to sell to revelers drinking under the cherry trees, but ended up consuming the entire cask themselves, each one in turn charging his brother for a cup of rice wine, and then using the proceeds to buy a cup for himself.

Although I was 100 percent immersed in conventional economics in the late 1970s as a graduate student in economics and a doctoral fellow at the Fed, I supported Reagan because I

believed that America's economic problems could not be solved by conventional macroeconomic policy, and instead required a substantial expansion of the nation's ability to supply goods and services. I still believe that the decision I made at that time was correct. The British economy was undergoing similar problems, and there, too, Prime Minister Thatcher pushed ahead with supply-side reforms.

When Reagan took office, the U.S. suffered from double-digit inflation and unusually high interest rates: short-term rates stood at 22 percent, long-term rates at 14 percent, and 30-year fixed-rate mortgages at 17 percent. Strikes were a common occurrence, the trade deficit was large and growing, the dollar was plunging, and the nation's factories were unable to produce quality goods.

Japan's economy suffered from a lack of demand

Japan's economic situation for the past fifteen years was almost a mirror image of that of the U.S. and Britain in the 1980s. Short- and long-term interest rates and home-mortgage rates fell to the lowest levels in history. With the exception of a September 2004 strike by the professional baseball players' union, there has been almost no industrial action in the past decade. Prices have fallen, not risen. And until recently overtaken by China and Germany, Japan boasted the world's largest trade surplus. Furthermore, the yen was so strong that in 2003 and 2004 the Japanese government carried out currency interventions totaling ¥30 trillion a year, also a record, to cap its rise.

All these data underscore that Japan's economy was characterized by ample supply but insufficient demand. Japanese products were in high demand everywhere but in their home market. The cause was not inferior products, but rather a lack of domestic demand.

At the corporate level, Japan's increasingly robust corporate earnings have gained much attention recently. Yet most of these profits derive from exports, with only a handful of companies gleaning substantial profits from the domestic market. Because domestic sales remain sluggish in spite of heavy marketing efforts, more and more businesses are allocating managerial resources to overseas markets, which boosts foreign sales and adds to the trade surplus. In short, for the past fifteen years Japan has been trapped

in a set of circumstances that are the opposite of those faced by the U.S. twenty-five years ago. There has been more than enough supply but not enough demand. So while structural problems did exist, they should not be blamed for the long recession. Exhibit 1-1 compares current Japanese economic conditions with those existing in the U.S. twenty-five years ago.

Exhibit 1-1. Structural problems cannot explain Japan's economic malaise

	Japan's Great Recession	U.S. during Reagan era
Short-term interest rates	0%	~22%
Long-term interest rates	~1.5%	~14%
Home mortgage rates	~3–4%	~17%
Labor issues	None	Frequent strikes
Prices	Deflation	Double-digit inflation
Balance of trade	World's largest surplus	Deficit
Exchange rate	Massive intervention to stem yen's rise	Falling sharply
Basic economic conditions	Adequate supply but not enough demand	Adequate demand but not enough supply

Note: Home mortgage rates are for 30-year fixed mortgages.

Source: NRI.

Japan did not recover because banking sector problems were fixed

It has also been argued that the banking sector was chiefly responsible for the recession. According to this argument, problems in the banking sector and the resultant credit crunch choked off

the flow of money to the economy. However, if banks had been the bottleneck—in other words, if willing borrowers were being turned away by the banks—we should have observed several phenomena that are typical of credit crunches.

For a company in need of funds, the closest substitute for a bank loan is an issuance of debt on the corporate-bond market. Even though this option is available only to listed companies, more than 3,800 corporations in Japan could have issued debt or equity securities on the capital markets if they were unable to borrow from banks.

But nothing of the sort was observed during the recession. The topmost graph in Exhibit 1-2 tracks the value of Japanese corporate bonds outstanding from 1990 to the present. Since 2002, the aggregate value of bonds has been steadily declining—in other words, redemptions have exceeded new issuance. Ordinarily, this scenario would be unthinkable with interest rates at zero. Even if we allow the argument that banks for some reason refused to lend to their corporate customers, the companies themselves make the decision whether to issue bonds. If firms sought to raise funds, we should have witnessed a steep rise in the amount of outstanding corporate bonds. In the event, however, the amount outstanding of such debt fell sharply.

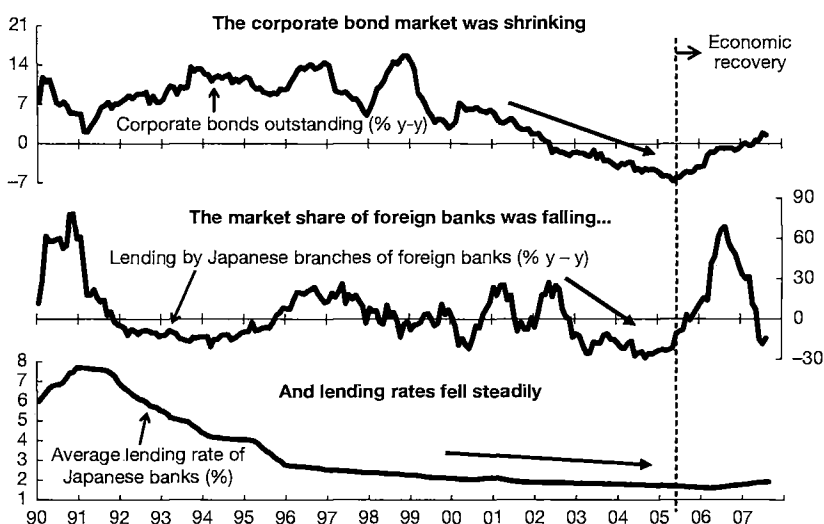
Additional evidence undermining this oft-heard argument is provided by the behavior of foreign banks in Japan, which unlike their Japanese rivals faced no major bad-loan problems after the collapse of the late-1980s bubble otherwise known as the Heisei bubble. If inadequate capital and a raft of bad loans did leave Japanese banks unable to lend despite healthy demand for funds from Japanese businesses, foreign banks should have enjoyed an unprecedented opportunity to penetrate the local market. Japan traditionally has a reputation as a tough nut for foreign financial institutions to crack because the choice of banker is so heavily influenced by corporate and personal relationships. If Japanese banks had actually been unwilling to lend, we should have witnessed a significant increase in lending to Japanese corporations by foreign banks, as well as a proliferation of foreign bank branches across the country. But this was not the case.

Before 1997, foreign banks needed authorization from the Ministry of Finance for each new branch in Japan. This requirement was eliminated as part of the “Big Bang” financial reforms of 1997, making it possible in principle for foreign banks to open

branches whenever and wherever they saw fit. But this change did not lead to a surge in the number of foreign bank branches in Japan. Although a few foreign lenders have expanded their share of the consumer-loan market, the middle graph in Exhibit 1-2 shows that loans outstanding at foreign banks in Japan have grown negligibly over the past dozen-odd years and actually fell sharply during several periods. This suggests that the inability of troubled Japanese banks to lend was not a bottleneck for the Japanese economy, since foreign banks were not expanding their loan business either.

A third objection to the argument that banking-sector problems caused the recession is offered by the interest rates charged by banks. Many small-and-medium-sized enterprises (SMEs) and other unlisted companies lacking access to the capital markets must rely on the banks for their funding needs. If banks—again because of inadequate capital or bad-loan problems—were constrained in their ability to lend to these companies, market forces should have driven up lending rates. If there were few willing lenders but many willing borrowers, borrowers should

Exhibit 1-2. Financial indicators are not consistent with the credit crunch argument



Source: Bank of Japan, *Average Contracted Interest Rates on Loans and Discounts and Principal Assets and Liabilities of Foreign Banks in Japan*; Japan Securities Dealers Association, *Issuing, Redemption and Outstanding Amounts of Bonds*.

have competed for the limited supply of loans by offering to pay higher interest rates.

But nothing remotely like this happened in Japan. As the bottom graph in Exhibit 1-2 makes clear, the interest rates charged by banks fell steadily over this fifteen-year period, eventually dropping to the lowest levels in history. During this period many business executives, including some from SMEs, asked me personally whether it was really all right to borrow at such low interest rates. They simply could not believe that bankers were willing to lend at such low interest rates and were concerned that there might be a hidden catch. Had banking sector problems been acting as a bottleneck for the economy, lending rates should have risen, foreign banks should have increased their share of the domestic loan market, and the corporate-bond market should have been brimming with activity. However, the complete opposite occurred.

Japan's experience was the opposite of that of the U.S. during the early 1990s credit crunch

These three phenomena are noted here because each was observed when the U.S. experienced a severe credit crunch in the early 1990s. The crunch at that time was triggered by corrections in both the leveraged buyout (LBO) and commercial real estate markets, combined with the collapse of numerous savings and loan (S&L) associations in 1989, which ultimately necessitated a \$160 billion taxpayer bailout. The corrections in the LBO and real estate markets were bad enough for the banks, but the situation was made worse by the failure of regulators to contain the earlier S&L fiasco. In response, government bank inspectors rushed to examine the health of commercial banks. Using the most stringent interpretation of the regulations, the regulators argued that many institutions were undercapitalized, thereby making the nationwide credit squeeze that lasted from 1991 to 1993 that much worse.

Faced with reduced availability of credit, listed companies in the U.S. turned to the bond market, triggering a boom in corporate-bond issuance. The market share of foreign banks in the commercial and industrial loan market also expanded sharply during this period.⁴

Japanese lenders were naturally among the foreign banks that benefited from this surge. At the time I was working in Tokyo, and I often received calls from high school and university classmates who were now serving as corporate treasurers for U.S. companies, and were in Tokyo on business. When I asked what they were doing in Japan, they told me that their U.S. banks had cut off their firms' credit lines, and that they were here to arrange replacement lines of credit with local institutions.

During the past fifteen years, however, hardly any Japanese company representatives were traveling to New York, Hong Kong, or Taipei in search of banks that would provide a yen credit line. It would have been easy enough for Japanese executives to travel three hours to Taipei to arrange one with a Taiwanese bank at almost the same rate they were paying in Japan. But almost none did.

Turning to the third phenomenon noted, bank lending rates, the U.S. economy was in such dire straits in 1991 that Fed chairman Alan Greenspan lowered the federal funds rate to 3 percent. But banks were unable to lend because they lacked capital, and this capital deficiency would not change no matter how much the central bank lowered short-term interest rates. With so many companies seeking to borrow, competition for the limited funds available drove up prime lending rates to 6 percent or higher. This enabled banks to pocket a 3–4 percent spread over their 3 percent cost of funds. Greenspan allowed this “fat spread” to persist for three years. For banks, this produced profit equal to more than 10 percent of their total assets. Because lenders were required to maintain capital worth 8 percent of total assets, this windfall profit completely rectified their initial capital shortage, and ended the credit crunch. With banking problems out of the way, the U.S. economy commenced a brisk recovery in 1994.

In Japan, meanwhile, conditions before the economy began to recover in 2005 were the exact opposite: bank lending rates fell steadily, the market share of foreign banks also fell, and the value of outstanding corporate bonds dropped. None of this should have happened if the credit crunch were indeed the primary cause of the nation's economic malaise. Instead, these phenomena confirm that the problems facing Japan's economy were neither structural in nature nor centered in the banking sector.

That is not to suggest that Japan's banking sector has no problems. Although Moody's financial ratings for Japanese banks

have improved somewhat, that none of the major banks was rated higher than “D” until May 2007,⁵ when “B-” is generally considered the lowest acceptable rating for a bank, underscores the severity of the problems in the sector even after the resolution of the bad-loan crisis. But once again, it is simply not the case that an earlier resolution of these problems would have led to a quick recovery in the broader economy.

2. The bubble's collapse triggered a balance sheet recession

Japan experienced a balance sheet recession in the 1990s

If Japan's fundamental problem was neither structural nor banking related, was it caused by monetary policy mistakes, as so many academics have claimed? To answer this question, one must look at a peculiar monetary phenomenon of the Japanese economy that is not discussed in any economics textbook or business book. Some readers may think this claim is exaggerated, but Japanese firms have spent the past dozen-odd years paying down debt when interest rates were at zero. One could scour the economics departments of universities and the business schools of the world, and not find a single one teaching that companies should pay down debt at a time when money is essentially free.

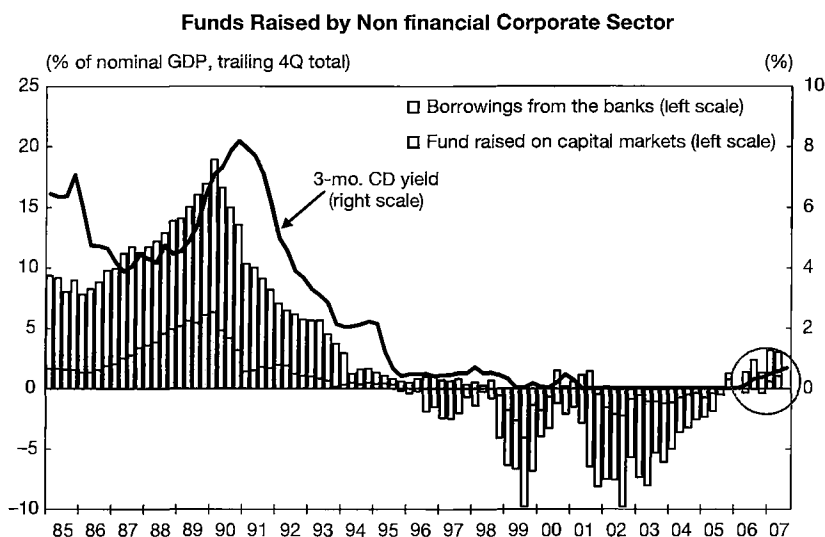
The reason they do not teach this is quite simple. According to conventional economic thinking, a company that is paying down debt at a time of zero interest rates is a company that cannot find a good use for money even when the cost of funds is zero. Such a firm, which has no reason to remain in business, should fold up shop and return the money to its shareholders, who ought to be able to find better uses for it. After all, companies exist because they are better at making money than other entities. Individuals entrust their savings—whether directly or indirectly—to firms capable of profitably investing them, in return for which they receive interest or dividend payments. This intellectual framework does not allow for an enterprise that refuses to borrow, much less one that seeks to liquidate existing debt, when interest rates and inflation rates

are both at zero. This is why no business school textbook contains such a case study.

But from about 1995, Japanese companies not only stopped taking out new loans, but actually paid back existing ones, despite short-term interest rates that were close to zero. Exhibit 1-3 plots short-term interest rates against funds procured by Japanese firms from banks and the capital markets. Interest rates were already approaching zero in 1995, yet instead of increasing their borrowing, firms accelerated their debt paydowns. Moreover, the trend to reduce fund procurement started soon after the bursting of the bubble in 1990, when Japan still had inflation. By 2002 and 2003, net debt repayment had risen to the unprecedented level of more than ¥30 trillion a year.

When companies that should be raising funds to expand their operations stop doing so en masse, and instead begin paying down existing debt, the economy loses demand in two ways: businesses are not reinvesting their cash flow, and the corporate sector is no longer borrowing and spending the savings generated by the

Exhibit 1-3. Japanese companies chose to pay down debt despite zero interest rates



Source: NRI, from Bank of Japan, *Monthly Report of Recent Economic and Financial Developments* and *Flow of Funds Accounts*; Government of Japan, Cabinet Office, *Report on National Accounts*.

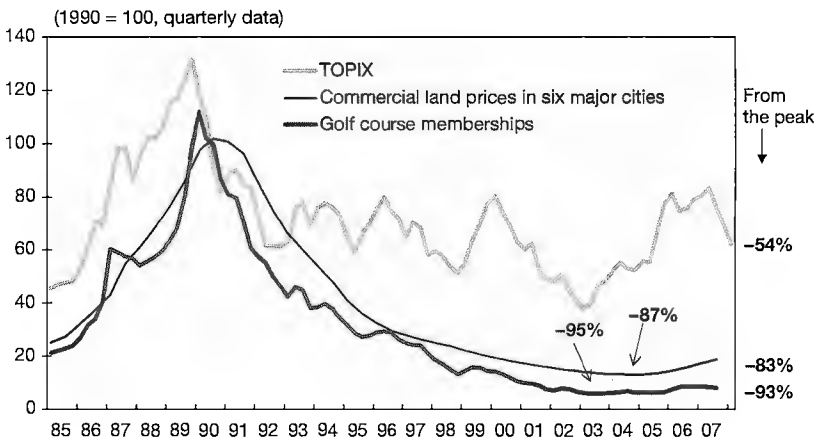
household sector. This contraction in aggregate demand causes the economy to fall into recession.

Plunging asset prices triggered corporate balance-sheet problems

Why then did businesses—which under ordinary circumstances seek to borrow money when interest rates fall—move to pay down debt despite interest rates at or approaching zero? The answer is that Japanese asset prices plunged in a most devastating manner for more than a decade, destroying millions of corporate balance sheets in the process. Exhibit 1-4 plots the price of commercial real estate in Japan's six largest cities, the TOPIX stock index, and the price of golf-club memberships. The Exhibit shows that stock prices, buoyed by foreign investors, fell “only” 54 percent (as of February 22, 2008) from their peak. The other two assets, which failed to attract foreign interest (at least until recently) suffered much steeper declines.

Although many members of the foreign media had a field day bashing “Japanese management” as the cause of Japanese economic ills, foreign investors were responsible for more than half of all net purchases of Japanese equities during the past fifteen

Exhibit 1-4. A collapse in asset prices triggered the balance sheet recession



Source: Tokyo Stock Exchange, Japan Real Estate Institute, *Nikkei Sangyo Shimbun*. As of Feb. 22, 2008.

years. The spread of online trading during the past five years has boosted the ranks of individual investors even in Japan, but most domestic investors had been burned by the bursting of the bubble in 1990, and were no longer interested in equities. In contrast, foreign investors still thought highly of Japanese companies' products and global reach, and their purchases kept Japanese stocks from falling further.

But it was a different story in markets in which foreign investors did not enter, or did not until recently. Golf-club memberships and commercial real estate had fallen 95 percent and 87 percent, respectively, from their peaks when prices bottomed in 2003 and 2004, leaving them at about one-tenth of their former values.

When the value of properties collapsed, but the loans used to buy them—or the loans obtained by using those properties as collateral—remained, companies all over Japan suddenly found that they not only lost a lot of wealth, but that their balance sheets were underwater. A business that had acquired land valued at ¥10 billion, for example, might have found itself with the land worth ¥1 billion and a residual loan balance of ¥7 billion. In other words, this asset–liability pair suddenly had a negative net worth of ¥6 billion, opening a large hole in the firm's balance sheet.

Japanese companies moved collectively to repair balance sheets by paying down debt

When a company's liabilities exceed its assets, it is technically bankrupt. But what happened in Japan was not an ordinary bankruptcy. In a typical failure, the business—say, a manufacturer of automobiles or cameras—finds that its products are no longer selling as well as they used to. It spends more to market the products, but to no avail. Meanwhile, the corporate coffers are dwindling by the day, and eventually the company's net worth turns negative. The failure of such a business cannot be helped because the products it was founded to make are no longer sought after by the market.

But the events witnessed in Japan starting in 1990 did not follow this pattern. For most of this period, Japan boasted the world's largest trade surplus—implying that consumers all around the world still wanted to buy Japanese products, and that companies still had good technology and the ability to develop

attractive products. The nation's frequent trade friction with the U.S. during the 1990s was testimony to the quality of and strong demand for local products.

In other words, core operations—the development and marketing of products and technologies—remained healthy. Cash flow was robust, and companies were generating annual profits. Yet many of these firms had a negative net worth because of the huge hole left in their balance sheets by the plunge in domestic asset prices. Thousands—perhaps even tens of thousands—of firms fell into this category.

Whether Japanese, American, German, or Taiwanese, the manager of a firm with a healthy business and a positive cash flow, but a deeply troubled balance sheet would respond in the same way: he or she would use cash flow to pay down debt as quickly as possible. In other words, the first priority is no longer profit maximization, but debt minimization. As long as the business is generating cash, it can repay its loans. Because assets cannot assume a negative value, a firm's debt overhang will eventually disappear as long as it continues to reduce the liability. At that point the business will return to the profit-maximizing mode assumed by economics textbooks.

During this process, firms put on a bright face for outside journalists and analysts, discussing their rosy earnings prospects in the hope of diverting attention away from the balance sheet. Meanwhile, they are quietly but furiously paying down debt. They have to do so because the discovery of balance-sheet problems by people outside the company would almost certainly have serious consequences for their credit ratings. If the media reported that a company was technically insolvent, the business in question would face uproar the next day. Its banks could turn off the credit spigot, and its suppliers might refuse notes and purchases on account, and demand cash settlement, putting the firm's survival in jeopardy. It is therefore essential that the company pay down debt quietly.

The urgency of debt repayment was heightened further by the fact that Japanese firms in the late 1980s were much more highly leveraged than their U.S. or European counterparts. They had high leverage because their growth rates were higher, and the value of assets they bought with borrowed funds kept on appreciating before the bursting of the bubble. Anyone running a highly leveraged company, however, would have rushed to pay

down debt at the slightest sign of economic trouble or collapsing asset prices on the horizon. It is the only thing one can do.

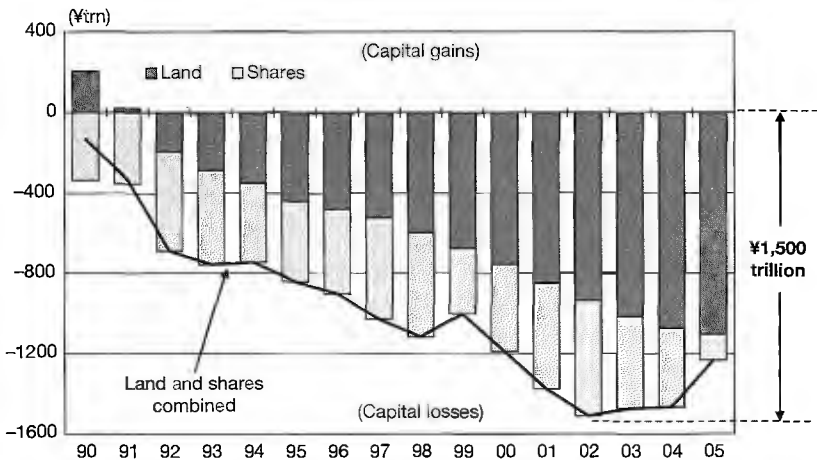
Aside from managers not actively providing disclosure of the company's financial problems to outsiders, this sort of behavior is not only the correct but the responsible thing to do. Because there is nothing structurally wrong with their main businesses, given sufficient time, these firms should be able to use their cash flow to remove their debt overhang. Other stakeholders in the firm, including creditors and shareholders, will also be demanding that management do just that, since this is a problem "time" can solve, and the alternative—declaring the company insolvent—will mean huge losses for all concerned. Shareholders, for example, do not want to be told that their shares are now worth nothing, and creditors do not want to be told that their assets have turned into nonperforming loans. As long as cash flow remains positive, the problem—which is not a structural matter of inferior technology or poor management—will be resolved in time. In a nutshell, this is the process by which so many Japanese companies began paying down debt during the 1990s.

The bubble's collapse destroyed ¥1,500 trillion in wealth

That so many firms began paying down debt all at once underscores the extent of balance-sheet damage incurred in the wake of the bubble's collapse. Exhibit 1-5 illustrates the loss in national wealth caused by falling land and stock prices starting in 1990. These two asset categories alone accounted for the unprecedented loss of ¥1,500 trillion in wealth, a figure equal to the entire nation's stock of personal financial assets.

This figure is also equivalent to three years of Japanese GDP. In effect, falling asset prices wiped out three years of national output. To the best of my knowledge, this is the greatest economic loss ever experienced by a nation in peacetime.

Japan was not the first nation to experience a huge loss of wealth during peacetime. In America's Great Depression, which began in 1929, sharp declines in the price of stocks and other assets prompted the private sector to begin paying down debt en masse. This had dire implications for the broader economy in an experience that mirrored Japan's many years later (this point

Exhibit 1-5. Falling asset prices destroyed ¥1,500 trillion in wealth

Source: NRI, from Government of Japan, Cabinet Office, *Annual Report on National Accounts*.

will be discussed in greater detail in Chapter 3). Americans, too, borrowed heavily to purchase everything from shares to consumer durables as share prices rose toward the peak. But after stocks and other assets plunged in value starting in October 1929, only the loans remained. Everyone rushed to reduce outstanding debt, triggering a plunge in aggregate demand. In just four years U.S. GNP fell to nearly half its 1929 peak. The unemployment rate exceeded 50 percent in large cities, and was as high as 25 percent nationwide. Shares plummeted to about an eighth of their peak value. Even so, it is estimated that the national wealth lost in this economic tragedy was equivalent to only a year's worth of 1929 GNP.⁶ This further underscores the magnitude of the damage suffered by Japan in the wake of the Heisei bubble collapse.

An absence of borrowers leads the economy into a contractionary equilibrium

When a nationwide plunge in asset prices eviscerates asset values, leaving only the debt behind, the private sector begins paying down debt en masse. As a result, the broader economy experiences something economists call a “fallacy of composition.” This occurs when behavior that would be right for one person (or

company) leads to an undesirable outcome when engaged in by all people (or companies). Japan's economy has suffered from this fallacy often over the past fifteen years.

In a national economy, banks and securities houses act as intermediaries to channel household savings to corporate borrowers. Take, for example, a household with ¥1,000 of income that spends ¥900 and saves the remaining ¥100. The ¥900 that is spent becomes income for someone else, and continues to circulate in the economy. The ¥100 of savings is deposited in a bank or another financial institution, and is eventually lent to a business, which spends (invests) it. Thus the original ¥1,000 is passed on to others. The economy remains in motion because every ¥1,000 in income generates ¥1,000 (¥900 + ¥100) in expenditures.

Continuing with this example, assume that there were not enough businesses to borrow the household's ¥100 in savings, or that they only borrowed ¥80. The bank would then lower the interest rate charged on loans in an attempt to attract more borrowers. The lower interest rate would prompt some business that was hesitant to borrow at the higher rate to take out a loan for the remaining ¥20, so that the entire ¥1,000 (¥900 + ¥100) would be passed into the hands of others, and the economy would keep firing on all cylinders. Conversely, if there were a surfeit of willing borrowers, competition for funds would lead the bank to increase the rate of interest it charged, causing potential borrowers to retract their decision to borrow until exactly ¥100 was lent out. This is how a normally functioning economy works.

But in Japan there were no willing borrowers, even with interest rates at zero. This should not be surprising, because a company suffering from a debt overhang will not ask to borrow more just because loans have grown cheaper. Instead, companies paid down debt at the rate of several tens of trillion yen a year despite interest rates that were close to zero. In these conditions, the ¥100 in savings that our hypothetical household deposits with the bank will be neither borrowed nor spent. Instead, it will pile up in the form of bank deposits, for which—in spite of the banks' best efforts—there are no borrowers. As a result, only ¥900 of the original ¥1,000 is spent to become income for someone else.

Now assume that the next household also spends 90 percent of its income, which amounts to ¥810, and saves the remaining 10 percent, or ¥90. Once again, the ¥810 becomes income for others,

while the remaining ¥90 simply accumulates in the banking system because there is no one to borrow it. As this process is repeated, the initial ¥1,000 of income is reduced to ¥900, ¥810, ¥729, and so on, sending the economy into a deflationary spiral. This downturn in the economy depresses asset prices further, redoubling the urgency of businesses' efforts to pay down debt. Although repaying loans is the correct (and responsible) course of action for individual firms, when pursued by all firms at once it leads to a disastrous fallacy of composition. This is the most frightening aspect of what may be called a balance sheet recession, in which firms are no longer maximizing profits, but are minimizing debt instead.

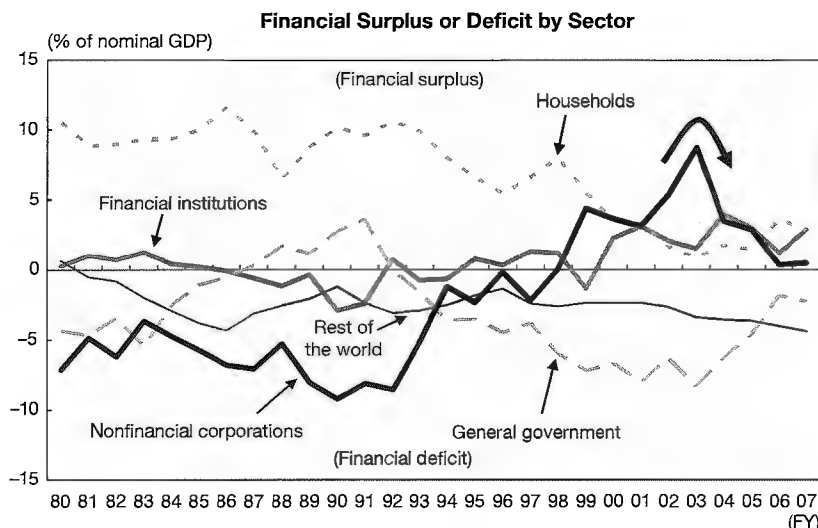
When no one is borrowing money, and all firms are striving to reduce debt despite zero interest rates, the fundamental economic mechanism responsible for channeling household savings into corporate investments ceases to function. This is exactly what happened seventy years ago in the U.S. during the Great Depression, when GNP plunged by 46 percent in just four years.

Incidentally, the example considered only household savings. In reality, aggregate demand would shrink by an amount equal to the sum of net household savings plus net debt repayment by firms. The combined sum would remain tucked away in the banking system, and serve as a leakage to the income stream as long as the shortage of borrowers persists.

Demand from Japan's corporate sector fell by more than 20 percent of GDP

So who saved and who borrowed money in Japan during the past fifteen years? Exhibit 1-6a, compiled using flow-of-funds data, shows which sectors of the economy are saving money and which are borrowing it. Any point above the horizontal line at zero indicates net savings. Any point below this line indicates net investment. The graph contains five data series—one each for households, nonfinancial corporations, the government, financial institutions, and the rest of the world—and is constructed so that at any point in time the five series sum to zero. To eliminate potential confusion from the jumble of lines in Exhibit 1-6a, Exhibit 1-6b reduces the number of series to four by combining nonfinancial corporations and financial institutions, because both experienced similar balance-sheet problems.

Exhibit 1-6a. A sudden shift in corporate behavior drove post-1990 changes in the Japanese economy (1)



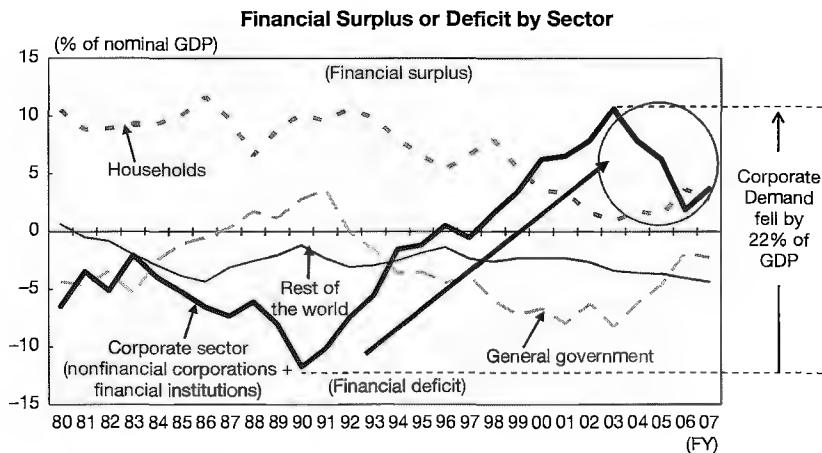
Note: Figures adjusted for the assumption of debt related to the Japan National Railways Settlement Corp. and national forest and field service special accounts (FY98) and for the impact of the FY05 privatization of the Japan Highway Public Corporation. Figures for FY07 are the sum of the four quarters from 2006/Q3 to 2007/Q2.

Source: Bank of Japan, *Flow of Funds Accounts*; Government of Japan, Cabinet Office, *National Accounts*.

To help readers understand what the graph tells us, consider what it should look like. In an ideal economy, the household sector would be at the top (net saver), the corporate sector would be at the bottom (net investor), and the remaining two sectors—general government and the rest of the world—would be around zero. A household-sector line near the top of the graph signifies a high savings rate for households. A corporate-sector line near the bottom of the graph means that businesses are actively borrowing and investing, resulting in a high investment rate. Finally, for the remaining two lines for the general government and rest-of-the-world sectors to be situated around zero on the graph implies that the government's budget and the country's external accounts are in balance. This represents the ideal state of affairs.

The next question is whether Japan has ever been in a position approximating this ideal state. The answer is yes, in 1990, at the peak of the Heisei bubble. At the time, Japan's household sector was located at the top of the graph, the corporate sector was at

Exhibit 1-6b. A sudden shift in corporate behavior drove post-1990 changes in the Japanese economy (2)



Note: Figures adjusted for the assumption of debt related to the Japan National Railways Settlement Corp. and national forest and field service special accounts (FY98) and for the impact of the FY05 privatization of the Japan Highway Public Corporation. Figures for FY07 are the sum of the four quarters from 2006/Q3 to 2007/Q2.

Source: Bank of Japan, *Flow of Funds Accounts*; Government of Japan, Cabinet Office, *National Accounts*.

the bottom, the rest of the world was a modest net investor (below zero), and the government sector was a modest net saver (above zero). Net investment by the rest of the world means that other countries were borrowing money from Japan—that is, Japan was running a current account surplus. Net savings by the government means that the government was running a budget surplus. In short, Japan's economy in 1990 was characterized by a high savings rate, a high investment rate, a current account surplus, and a fiscal surplus. No economy could hope for anything better than that. Somewhat earlier, in 1979, Harvard professor Ezra Vogel had written the bestseller *Japan as Number One: Lessons for America*, and in a sense the book's title was quite accurate. From a flow-of-funds standpoint, the economy in 1990 could not have been in better shape, and it is not surprising that Japan was seen as having no rivals on the world economic stage.

Unfortunately, investment in 1990 was a bubble, and everything changed when the bubble burst. First, the plunge in asset prices that began in 1990 opened a gaping hole in the corporate sector's balance sheet. As a result, funds raised by

businesses (represented by the bold line in Exhibit 1-6b) began to fall steadily, starting in 1990, as shaken companies rushed to pay down debt.

The number of companies paying down debt increased steadily, and by 1998 the corporate sector as a whole had become a net saver, pushing it above the zero line in the graph. This means that firms not only stopped procuring funds from the household sector, but actually started using their own cash flow to pay down debt. From this point onward, companies in the aggregate were paying down debt, which is a dangerous state for any economy. By 2000, businesses were actually saving more than households. The businesses that under normal circumstances would be the economy's largest borrowers had become its greatest savers, returning funds to financial institutions, rather than procuring funds. This state of affairs persisted in Japan until recently.

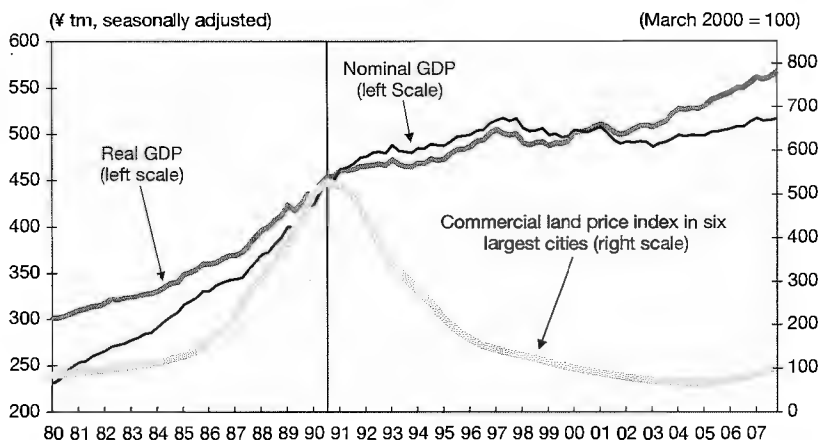
The corporate demand lost as a result of this shift in corporate behavior amounted to more than 20 percent of GDP (Exhibit 1-6b) from 1990 to 2003. In effect, the plunge in asset prices wiped out corporate sector demand equal to more than 20 percent of GDP. A demand loss of this magnitude will throw any economy into a recession, and this one was on track to become another Great Depression.

3. Fiscal expenditures bolstered Japan's economy

Why GDP did not fall after the bubble's collapse

What sets Japan's Great Recession apart from the U.S. Great Depression is that Japanese GDP stayed above bubble peak levels in both nominal and real terms despite the loss of corporate demand worth 20 percent of GDP and national wealth worth ¥1,500 trillion (Exhibit 1-7). These circumstances should have plunged the economy into a deflationary spiral like the one experienced by the U.S. during the Great Depression, leaving Japan's GDP at a fraction of its peak. Why was the actual outcome so different?

There are two reasons, both of which should be evident from Exhibit 1-6b. First, the line for the household sector, a net saver, has been falling steadily since the bubble burst. In other words, households have continually reduced their savings. This

Exhibit 1-7. Japan's GDP continued to grow even after the bubble burst

Note: Discontinuities in the real GDP series have been adjusted by NRI.

Source: Government of Japan, Cabinet Office, National Accounts; Japan Real Estate Institute, *Urban Land Price Index*.

happened because the bubble's collapse triggered job losses, pay cuts, and the elimination of company bonuses, making it difficult for households to save as much as they wanted to.

Before 1990, Japanese consumers purchased homes and invested in their children's education based on the assumptions that they would always have jobs and their salaries would rise continuously, as they had during the previous forty-five years. Those assumptions had to be cast aside in the 1990s, however, as workers fell casualty to corporate debt repayment and restructuring efforts. But bonuses being halved or eliminated did not free employees from the need to pay mortgages or school fees. Many had to draw down past savings. The need was particularly pressing among those who lost their jobs or were forced to take significant pay cuts because of corporate restructuring.

Japanese households once boasted the highest savings rate in the world. Yet today, one in four Japanese families has no savings at all.⁷ Although people who kept good jobs and saw their salaries rise as expected continued to save as much as before, those whose incomes fell were forced to deplete their savings. In the aggregate, therefore, household savings declined.

To return to the ¥900/¥100 example of the preceding section, households wanting to save ¥100 found themselves able to save

only ¥50 because their incomes had been sharply reduced. The resulting decline in savings was hardly cause for celebration, and was extremely unfortunate for the households involved. From a macroeconomic perspective, however, it helped to prop up the economy by reducing the amount of funds that would otherwise have been bottled up in the banking system.

Fiscal stimulus supported Japan's economy

Even more important were developments in the government sector. The government was still running a surplus in 1990 and 1991, because tax revenues remained high in the immediate aftermath of the bubble. But the economy began to deteriorate rapidly around 1992. At the time, policymakers thought this was just another cyclical downturn, which a year or two of pump priming would take care of. Not surprisingly, this belief was eagerly embraced by the pork-barrel politicians of the ruling Liberal Democratic Party (LDP), who proposed that the government use fiscal policy to stimulate the economy by building roads and bridges.

Fiscal stimulus simply involves the government issuing bonds and spending the proceeds. In effect, the government steps in to borrow and spend the original ¥100 saved by the household sector that would otherwise have languished in the banking system. By doing so, it ensures that there will be ¥1,000 ($¥900 + ¥100$) in expenditures for every ¥1,000 of income, and the economy stabilizes soon after the fiscal stimulus is implemented.

At first, there was general relief that the pump priming had been successful, as the economy stabilized as expected. But when the impact of these measures wore off the next year, the economy slumped again. Why was the fiscal stimulus having only a temporary benefit? With commercial real estate prices down 87 percent from their peak, and ¥1,500 trillion in national wealth having simply vanished, companies could never have repaired their balance sheets in just a year or two. For a typical company, the process would take at least five years. For companies unfortunate enough to have bought real estate at the peak, it might take twenty. In the meantime, they will continue paying down debt as long as they have positive cash flow. As long as this process continues, they will not borrow household-sector savings, forcing the government to fill the resulting gap with an annual round of fiscal stimulus.

The result is illustrated in Exhibit 1-6b. The financial deficit of the government sector mounted sharply, leaving in its wake the national debt we face today. But it was precisely because of these expenditures that Japan was able to sustain GDP at above peak-bubble levels despite the drastic shift in corporate behavior and a loss of national wealth equivalent to three years of GDP. Government spending played a critical role in supporting the economy, and only through these annual stimulus packages was the government able to prevent a deflationary gap from emerging. (In economics, a deflationary gap is defined as the difference between potential and actual GDP. In this writing, the term deflationary gap is used to designate the amount of household savings and net corporate debt repayment that become bottled up in the banking system due to lack of borrowers. The present definition is equivalent to the leakage to income stream, and is preferred here because it is not subject to all the estimation problems surrounding potential GDP.)

Japan was left with a large national debt. But if the government had not responded with this kind of stimulus, GDP would have fallen to between one-half and one-third of its peak—and that is in an optimistic scenario. U.S. GNP shrank by 46 percent after falling asset prices destroyed wealth worth a year's worth of 1929 GNP during the Great Depression, and the situation in Japan could easily have been much worse. This outcome was avoided only because the government decided early on to administer fiscal stimulus and continue it over many years. In the end, the government's action ensured that this doomsday scenario did not come to pass.

In summary, the private sector felt obliged to “do the right thing”—to pay down debt—which led to the fallacy of composition described. Disastrous consequences were avoided only because the government took the opposite course of action. By administering fiscal stimulus, which was also the right thing to do, the government succeeded in preventing a catastrophic decline in the nation's standard of living despite the economic crisis. In this sense, it could be argued that Japan's fiscal stimulus was one of the most successful economic policies in human history.

Unfortunately, it was not until quite recently that Japan's policymakers were able to see things in this light. It took them so long because no one had taught them that firms could be minimizing debt instead of maximizing profits when faced with

daunting balance-sheet problems. Even today, few universities teach students that firms sometimes pay down debt despite zero interest rates. And the government has yet to explain to the public that fiscal stimulus was necessary because the private sector was paying down debt, and that it was only because of this fiscal action that the nation's standard of living was maintained.

Moreover, the very success of government actions in averting an economic crisis led to a completely misguided criticism of Japanese economic policies. In particular, many casual observers of the Japanese economy, including the pre-1997 IMF, latched onto the view that the government must have spent the money inappropriately—after all, GDP remained stuck at ¥500 trillion, and the economy was unable to stage a healthy recovery despite massive economic stimulus in the form of investment in public works.

In reality, it was only because the government increased fiscal expenditures to the extent it did that the nation's standard of living did not plummet. Indeed, it is nothing less than a miracle that Japan's GDP remained at above peak bubble-era levels despite the loss of ¥1,500 trillion in national wealth and corporate demand equal to 20 percent of GDP, and it was government spending that made this miracle possible. But media representatives and the conventional-minded economists at the IMF and universities were unable to see this, and repeatedly criticized public-works investment based on the erroneous assumption that GDP would have stayed at ¥500 trillion even *without* fiscal stimulus.

Those who averted the crisis did not become heroes

What is even more unfortunate is that, as someone once said, no one becomes a hero by preventing a crisis. In a Hollywood world, the hero is the one who saves hundreds of lives and dispatches the villain *after* the crisis has erupted and thousands have died. But if a wise individual recognizes the danger in advance, and successfully acts to avert the calamity, there is no story, no hero, and no movie. A hero needs a full-blown crisis.

Japan successfully avoided economic apocalypse for fifteen years. But from the perspective of the media, which have never grasped the essence of the problem, the government spent ¥140 trillion, and nothing happened. So they twisted the story to imply that the government wasted the money, which sparked public

opposition to public-works projects. Although unnecessary roads should not be built if more socially useful projects are available, the important thing is that the money spent over the past fifteen years—including that spent on roads and other public works—averted a potentially catastrophic deflationary spiral with an ever-shrinking GDP.

Herbert Hoover, who served as president of the U.S. during the Great Depression, was a distinguished man and a proponent of what would now be called structural reform. He argued that a plunging stock market and the losses that stock market speculators had incurred were not sufficient reasons to increase government spending. As a result of this inaction, the U.S. fell into the deflationary spiral described. GNP plunged by 46 percent in just four years, the nationwide unemployment rate rose to 25 percent, and ordinary people found themselves cast out on the streets and fighting for survival. Their number exceeded the number of actual stock market speculators by many orders of magnitude. In Japan, meanwhile, the LDP's pork-barrel politicians filled the deflationary gap created by the private sector's rush to pay down debt (which created excess savings). This is what kept Japan's Great Recession from becoming another Great Depression.

Delaying the cap on government deposit insurance also helped avert a crisis

The other policy action by the government that averted crisis was the announcement of a blanket deposit guarantee in 1997. The U.S. in the early 1930s had neither a Federal Deposit Insurance Corporation nor even the concept of deposit insurance. With no safety net whatsoever, a problem at one bank could spark concerns about all financial institutions, ultimately leading to massive bank runs. Some 10,000 U.S. banks—more than one-third of the 25,000 lenders in existence at the time—failed between 1929 and 1933. This was a terrifying situation for anyone keeping money in a bank.

In Japan, it was not until 1997 that banking-sector problems became a national problem. When they did, the government immediately announced that it would guarantee all bank deposits. Japan had lost assets worth three years of GDP, many of which were concentrated in the banking sector. Consequently, the damage suffered by Japanese banks was far greater than that incurred by

U.S. lenders seventy years ago (hence their persistently poor credit ratings). But the government successfully contained the problem by announcing as soon as the crisis broke that all deposits would be protected. This simple announcement averted a much greater crisis that could have cost the nation hundreds of trillions of yen—the likely loss if a third of Japan's banks had failed. The policymakers responsible for administering fiscal stimulus and announcing an unlimited government guarantee on bank deposits were indeed the real heroes of Japan's Great Recession.

4. Debt minimization and monetary policy

Monetary policy is impotent during a balance sheet recession

Until now our discussion has focused on fiscal policy, but the authorities have one more policy tool at their disposal: monetary policy. Economics textbooks tell us that governments manage their economies using a combination of monetary and fiscal policy. As noted at the outset, many academic economists have blamed Japan's recession squarely on what they see as the Bank of Japan's inept administration of the former. Their focus on monetary policy came about because the economic profession has increasingly favored monetary over fiscal policy, and the actual policy response to economic fluctuations in nearly all developed countries since the 1970s has been dominated by monetary policy. This emphasis has led many to argue that the Bank of Japan, which is responsible for monetary policy, should play a larger role.

During the Koizumi administration, the government, led by Heizo Takenaka, frequently demanded that the central bank increase the money supply, often threatening that the Bank of Japan's failure to do so could lead to the loss of its independence. Academic economists both inside and outside Japan have also argued ceaselessly that the recession could have been avoided had the Bank of Japan been more skilled in its administration of monetary policy. These views are frequently voiced by international bodies such as the IMF and OECD as well.

Chapter 3 will explain in detail why so many academics hold this view. But for now, all that readers need to know is that one of the key characteristics of a balance sheet recession, a phenomenon

unlikely to occur more than once every several decades, is that monetary policy becomes useless. People in Japan have already experienced this first-hand: monetary policy had no effect, even though interest rates remained at or near zero from 1995 to 2005. The stock market did not rally, and the economy did not recover. In contrast, the late 1980s asset-price bubble happened when the official discount rate stood at 2.5 percent. Yet just a few years later, in February 1993, the same policy rate of 2.5 percent had no stimulative impact whatsoever. Nor, subsequently, did an interest rate of 0 percent.

Monetary policy is ineffective when there is no demand for funds

This prompts the question of what caused such a dramatic change in the Japanese economy's response to monetary stimulus in the space of just a few years. The answer, in short, is that the sharp deterioration of corporate balance sheets dramatically reduced the number of willing borrowers. Although it has never been explicitly stated in the economics literature, the efficacy of monetary policy is based on a key assumption: the existence of willing borrowers in the private sector. Monetary policy loses all power if this condition is not met. When the economy overheats, for example, the central bank can respond by raising interest rates, which will cause prospective borrowers to have second thoughts, and thereby reduce demand. When the economy is weak and there is a shortage of willing borrowers, the bank can lower rates, expanding the pool of borrowers and boosting demand.

But after the bubble collapsed in Japan, not only were there no willing borrowers, but existing borrowers were paying down debt—and they were doing so when interest rates were at zero. Technically insolvent companies, struggling to pay down debt and repair balance sheets hit by the nationwide plunge in asset prices, were not interested in borrowing money, regardless how far the central bank lowered rates. In effect, the entire economy had stopped responding to interest rates. In this environment, monetary policy by itself no longer has any effect.

Yet many economists both inside and outside Japan as well as politicians like Takenaka applied a great deal of pressure to the Bank of Japan, arguing that the economy would recover if the bank

would just increase the money supply by injecting more liquidity. These arguments serve only to underscore their ignorance of the actual cause of the long recession.

The mechanism of money supply growth

Let us examine the process of money supply growth as explained in economics textbooks. It begins when the central bank, the Bank of Japan in this case, supplies liquidity to commercial banks. Ordinarily, the central bank does this by purchasing government bonds and other highly rated corporate bonds from the banks. The banks then take the proceeds from these sales and lend them out in an attempt to earn interest. This money is spent by the borrowers, and then deposited by the recipients in other banks, which place a portion of the money in reserve, and lend out the remainder. Money lent out in this fashion is spent by the borrower, and eventually ends up as a deposit in some other bank, which relends it after setting aside the necessary reserves. As this process is repeated, deposits (and loans) in the banking system steadily expand.

The amount set aside as reserves depends on two factors: the Bank of Japan's official reserve requirement and the excess reserves set aside at the bank's discretion. If banks set aside only the legally required reserves, total growth in deposits is given by a multiple equal to the reciprocal of the statutory reserve requirement. If the reserve requirement is 10 percent, for example, liquidity supplied by the Bank of Japan would eventually generate deposits equal to ten times the initial injection.

The sum of these deposits plus currency in circulation (notes and coins) is referred to as the money supply. The lion's share of the money supply, however, is accounted for by bank deposits. The ratio of the money supply to the liquidity originally injected by the central bank is called the money multiplier. In the example presented, the money multiplier would be close to ten.⁸

An increase in the money supply, most of which is composed of bank deposits, means the private sector has more money available to spend. That, in turn, should boost the economy. This is why economists keep close tabs on the money supply.

It is obvious from the preceding that there must be borrowers who are willing to take out loans if the central bank injection of liquidity is to increase the money supply. When there are no

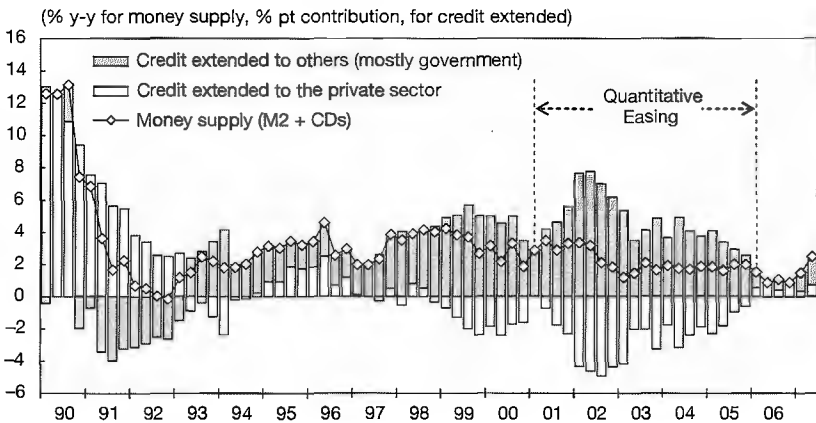
borrowers, the money supply cannot grow, because liquidity injected by the central bank cannot leave the banking system. This also means that when the entire private sector moves to pay down debt, the money multiplier process begins to reverse itself.

Companies and households typically pay down debt by withdrawing money from their bank accounts. So when the entire private sector is paying down debt, bank deposits lessen and the money supply contracts. In the absence of borrowers, debt repayment will reduce the money supply almost dollar for dollar. During the Great Depression, the U.S. money supply shrank by 33 percent as businesses and households drew down their bank deposits to pay back loans.

Government borrowing drove money supply growth

Even though Japan's private sector was continuously paying down debt from 1998 onward, the money supply (M2 + certificates of deposit) in Japan not only failed to contract, but actually expanded at an annual rate ranging from 2 percent to 4 percent (Exhibit 1-8) during the same period. This seemingly contradictory phenomenon is explained by Exhibit 1-8, which shows the type of

Exhibit 1-8. Government borrowing has propped up the money supply



Note: (1) Credit extended to others = (1) public sector + (2) foreign assets (net) + (3) others. (2) Public sector = credit to central government (net) + credit to local public sector bodies + credit to public corporations. (3) Others = (money + quasi-money + CDs) - (foreign assets [net] + domestic credit). Accordingly, an increase or decrease in credit extended to others reflects the impact of increases/decreases in public sector debt, increases/decreases in commercial bank debentures, increases/decreases in financial institution deposits, and data errors.

Source: Bank of Japan, *Monetary Survey*.

borrowing behind Japan's money-supply growth. The lighter bars indicate private-sector borrowing; the darker bars, other—that is, government—borrowing. Net borrowing by the private sector turned (and stayed) negative in 1998, while net borrowing by the public sector was consistently positive.

Because the private sector is paying down debt, money flows back into the banking sector. Banks try to lend this money out, but find no willing borrowers because the private sector is intent on reducing its debt load. The government, however, is running a fiscal deficit, which it funds by issuing bonds. The banks—lacking any other borrowers—eventually end up using surplus funds to buy these bonds and earn interest. In effect, they are lending money to the government. The proceeds of the bond sales are spent on roads and bridges, and the construction firms and their workers and suppliers deposit the money in banks, thereby increasing total deposits in the system. Once again, banks try to lend this money to the private sector, are unable to do so, and eventually use it to buy government debt. The process is then repeated. This is why the money supply not only did not shrink, but actually expanded during the long recession.

Fiscal policy determines effectiveness of monetary policy

In this sense, Japan's monetary policy and money supply have totally depended on the government's fiscal policy for the past ten years—private-sector enterprises have been paying down debt since around 1998, leaving the government as the only borrower. An increase in government borrowing produces a corresponding increase in the money supply, augmenting the effectiveness of monetary policy. If the government stops borrowing, the money supply will shrink no matter what the Bank of Japan does. In this sense, fiscal policy has been the most important determinant of the size of money supply in Japan.

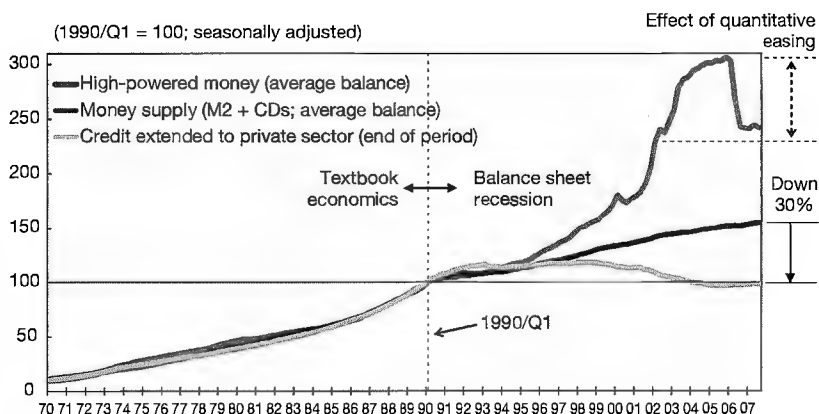
Even though academic economists inside and outside Japan have bashed the Bank of Japan for not doing enough, without private-sector borrowers, only an increase in government borrowing will boost the money supply. The next time politicians demand that the Bank of Japan increase the money supply, the central bank would do well to reply that if the government wants to expand the money supply, it needs to borrow more.

When private-sector firms have balance-sheet problems, neither the government nor the Bank of Japan can ask them to stop paying down debt. A company with debt overhang must clean up its balance sheet as soon as possible, regardless what the government says, because it never knows when the outside world might find out about its balance-sheet woes. But if the government simply stands by and watches, the economy will fall into the kind of catastrophic deflationary spiral seen in the U.S. between 1929 and 1933. To stop this vicious circle, the government has only one option: it must do precisely the opposite of what the private sector is doing. In other words, it must borrow (and spend) the savings that the private sector can no longer use. This is what Japan ultimately chose to do, and it is why the money supply did not contract and GDP remained steady at about ¥500 trillion despite the loss of ¥1,500 trillion in national wealth and a decline in corporate demand totaling more than 20 percent of GDP.

Conventional economic theory does not allow for corporate debt minimization

Exhibit 1-9, which tracks three key monetary aggregates over time, underscores just how different Japan's current circumstances

Exhibit 1-9. Monetary aggregates behave totally differently under a balance sheet recession



Note: Credit extended to private sector seasonally adjusted by NRI. Adjustments made for discontinuities in line with the Bank of Japan, *Monetary Survey*.

Source: Bank of Japan, *Monetary Base* and *Monetary Survey*.

are from those of the world found in the textbooks. The three aggregates are the money supply, private-sector credit, and cash in circulation and commercial bank reserves at the Bank of Japan, also known as high-powered money. The first two appeared in Exhibit 1-8, and the third is a measure of liquidity supplied by the Bank of Japan.

Conventional economic theory holds that these three indicators should move together. If the central bank boosts liquidity by 10 percent, for example, bank lending and the money supply should also expand by 10 percent. From 1970 to 1990, Japan's economy behaved in just this way, and the three aggregates moved in lockstep.

But this changed in 1990, when Japan fell into a balance sheet recession, and the three monetary aggregates began to move independently of each other. At the time, the Bank of Japan was under heavy pressure from politicians and academics at home and abroad to stimulate the economy by boosting the supply of high-powered money, and it complied. Rebasing to 1990/Q1 = 100, liquidity had risen to 300 in 2005—in other words, the Bank of Japan had tripled the amount of liquidity in the system over this fifteen-year period. But the money supply—money actually available to the private sector—rose only 50 percent, and this happened only because of government borrowing (Exhibit 1-8).

Private sector credit is outstanding credit and loans extended by financial institutions to the private sector. As noted, bank deposits cannot increase without a corresponding rise in bank lending. Under ordinary circumstances, therefore, private-sector credit should be the key determinant of the money supply. But by June 2006, private-sector credit had actually fallen to 95 from 100 in 1990. This means that if the money supply was determined solely by private-sector demand for funds, Japan's money supply would be 95 instead of 150, or about 37 percent less than the current money supply. For the past fifteen years, in effect, Japan's economy has been experiencing the same difficulties faced by the U.S. during the Great Depression, when the money supply shrank by 33 percent.

Japan has avoided falling into depression-like conditions only because the government has continued to borrow and spend. Even as private-sector credit declined, the increase in credit to the public sector—that is, bank purchases of government bonds—enabled

the money supply to expand, and ensured that debt repaid by the private sector did not become bottled up in the banking system. In this sense, Exhibits 1-8 and 1-9 confirm that Japan's economy has inhabited a world uncharted by conventional economic theory: a world in which fiscal policy determines the effectiveness of monetary policy.

Germany has faced the same problem

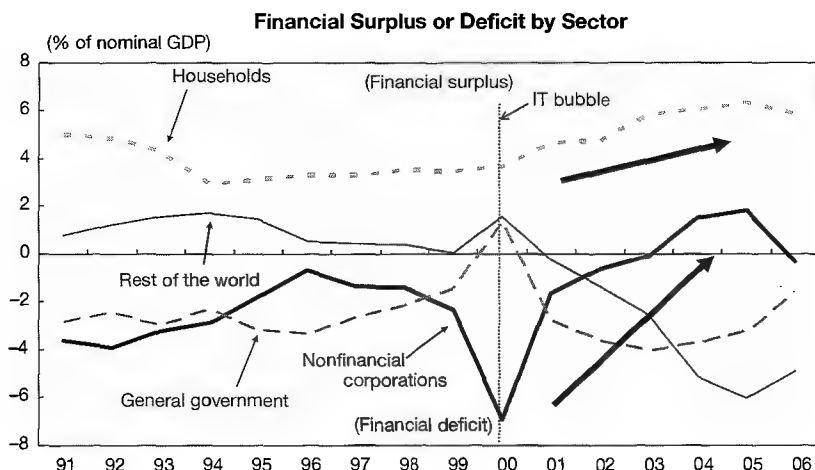
Finally, there is a cultural argument for the prolonged recession Japan had suffered. Alan Greenspan, for example, attributed Japan's inability to weed out zombie companies as the key reason for its prolonged recession. But as noted, debt repayment by companies with good cash flow produced the deflationary gap, not zombie companies with no cash flow available to pay down debt.

At the beginning of this Chapter, it was also mentioned that Germany suffered a five-year recession from 2000 to 2005, its worst slump since World War II. When one looks at the German economy from a balance sheet recession perspective, one notices that until quite recently companies in Germany were also paying down debt despite historically low interest rates. At the peak in 2005, net debt repayment amounted to 1.8 percent of GDP. Moreover, the move to pay down debt started years ago, when the German telecoms bubble burst in 2000. At that time, Germany still had inflation, just as Japan did in the early 1990s. These events are illustrated in Exhibit 1-10, which shows that Germany's prolonged recession coincided exactly with the period when German businesses were paying down debt.

German and Japanese companies began de-leveraging because the sharp fall in asset prices that followed the bubble's collapse badly damaged their balance sheets. Commercial real estate prices in Japan's six largest cities plunged 87 percent from their 1990 peak (Exhibit 1-4). Germany experienced a sharp drop in share prices as the telecoms bubble⁹ burst in 2000, with the Neuer Markt bourse for start-ups falling 96 percent from its peak.

When asset prices plunge as they did in Japan and Germany, many companies suddenly find themselves carrying excess debt or even technically insolvent. Although technical insolvency normally means bankruptcy, it is not an ordinary bankruptcy in the sense that, in most cases, these companies still have sound

Exhibit 1-10. German households and companies have been repairing their balance sheets



Note: Adjusted for the assumption of the Treuhand agency's debt by the Redemption fund for Inherited Liabilities in 1995.

Source: Deutsche Bundesbank (2007); Federal Statistical Office of Germany.

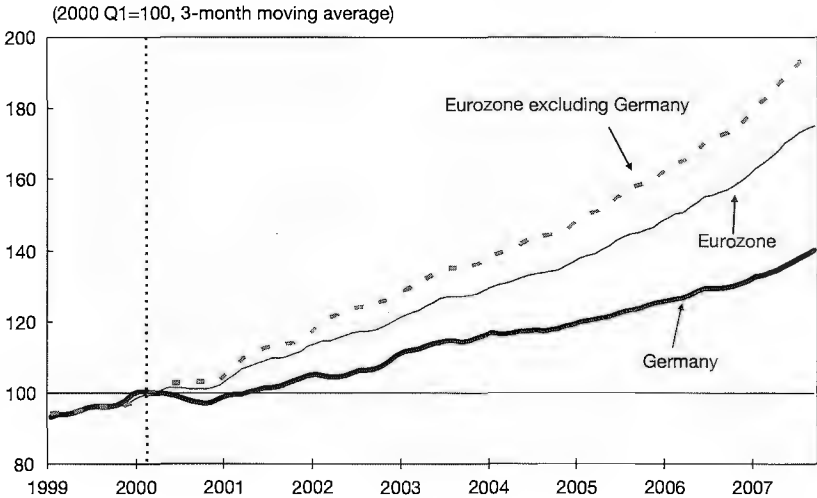
businesses and positive cash flow. That both Germany and Japan are running some of the world's largest trade surpluses implies that their firms are still highly competitive, with good technology, marketing, and global customer bases.

Regardless of their nationality, the CEOs of companies with healthy businesses but troubled balance sheets will respond in the same way: using operating cash flow to pay down debt. When many companies try to do this all at once, however, the economy is pushed into a balance sheet recession, a kind of recession that is as rare as the nationwide asset-price bubble that precedes it.

The ECB (European Central Bank) responded to economic slowdown by dropping interest rates to a postwar low, which promptly sparked housing bubbles in France, Spain, and Ireland, but not in Germany. In spite of record low interest rates, German house prices kept on falling. Money supply growth, which picked up sharply in non-German parts of the eurozone, also grew very slowly in Germany (Exhibit 1-11). All these phenomena suggest that Germany was indeed afflicted with a balance sheet recession.

This suggests that this type of recession can happen to any country after a collapse of asset prices. Indeed, the next likely

Exhibit 1-11. Money-supply growth in Germany lagged the rest of the eurozone



Note: Adjusted for discontinuity in Germany's M3.

Source: ECB, Deutsche Bundesbank

candidate for a balance sheet recession is the U.S. now that its housing bubble has burst.

The point is that cultural differences have nothing to do with these recessions. It is the nationwide collapse of asset prices and subsequent deterioration of private-sector balance sheets that trigger prolonged recessions.

ENDNOTES

1. From then Federal Reserve chairman Greenspan's testimony before the Joint Economic Committee on May 21, 2003. For details, see "Q&A Transcript VIII" in Bloomberg (2003).
2. Krugman (1998), p. 172.
3. For instance, see Koo (1998).
4. McCauley and Seth (1992).
5. For details, see Moody's website: www.moody.com.
6. Goldsmith (1962), p.112.
7. Central Council for Financial Services Information (2006).
8. It will be exactly ten if the public hold no notes and coins.
9. In Germany, the IT bubble was referred to as the telecoms bubble.

Characteristics of Balance Sheet Recessions

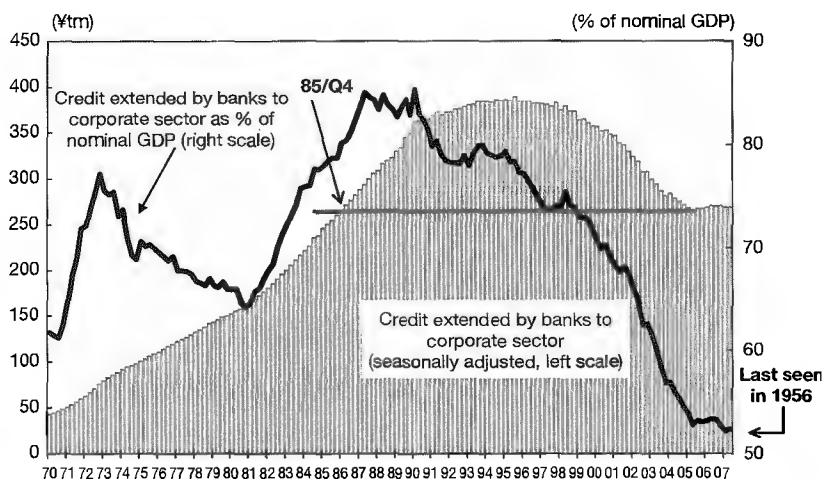
1. Emerging from a balance sheet recession

Companies have stopped paying down debt

Japan's unfolding recovery is real because firms have finally stopped paying down debt, and have begun to borrow again for the first time in more than a decade.

Net debt repayments by corporations were still increasing in 2003, producing a growing deflationary gap that forced the government to administer a corresponding amount of fiscal stimulus. But net repayments began to decline in 2004, and by the end of 2005, they had fallen to zero for the corporate sector as a whole. Now companies have started borrowing again (see circled area in Exhibit 1-3) in what represents a historic turning point after fifteen years of recession.

The key factor contributing to the turnaround is the improvement in the health of Japanese corporate balance sheets. The bars in Exhibit 2-1 indicate banks' outstanding loans to corporations. The graph shows that firms stopped repaying debt after they managed to reduce their bank borrowings to 1985—that is, pre-bubble—levels. In effect, businesses have finally removed all bubble-related detritus from their balance sheets.

Exhibit 2-1. Corporate debt repayment has finally stopped

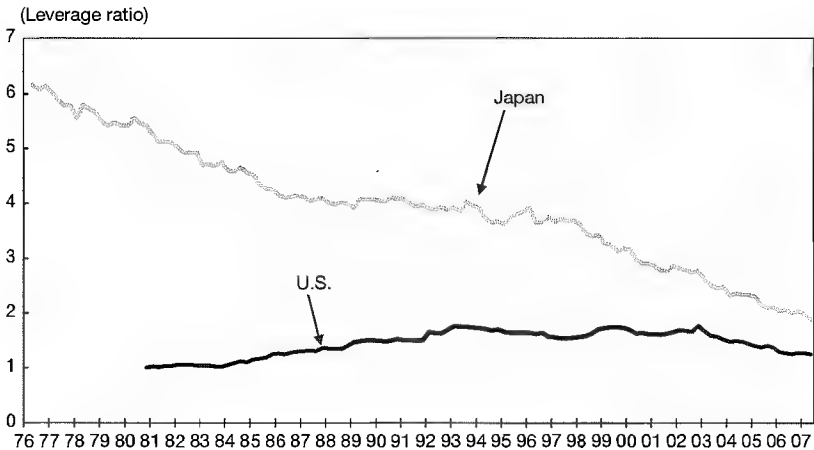
Notes: (1) Credit extended by banks to corporate sector was estimated by NRI after adjustment for discontinuities. (2) GDP statistics before 1979 are SNA68.

Source: Compiled by NRI from Bank of Japan, *Loans and Discounts Outstanding by Sector and Loans to Individuals*; Government of Japan, Cabinet Office, *National Accounts*.

The line in Exhibit 2-1 shows bank lending to the corporate sector as a percentage of nominal GDP. After rising as high as 85 percent during the bubble, this key ratio has now dropped to 52 percent, the lowest figure since 1956. Even in the 1970s and 1980s, when Japan's economy was the envy of the world, Japanese firms were often said to be much more highly leveraged than their Western counterparts. But now debt has fallen back to 1956 levels, and leverage has come down to the Western norm.

Businesses have cleaned up their balance sheets

Indeed, this leverage issue was another reason Japanese firms moved to pay down debt during the 1990s. Exhibit 2-2 shows leverage ratios over time at Japanese and U.S. firms. Japanese businesses used to be extremely dependent on debt financing relative to their Western counterparts. In the first half of the 1980s, for example, leverage ratios at Japanese firms were five times those at U.S. corporations. But no one thought twice about this at the time, because the economy was rapidly expanding, and asset prices were surging higher. Few were worried about debt levels

Exhibit 2-2. Leverage at Japanese companies has fallen sharply

Source: Ministry of Finance, *Financial Statement Statistics of Corporations by Industry*; U.S. Department of Commerce, *Quarterly Financial Report: U.S. Manufacturing, Mining, and Trade Corporations*.

under these circumstances. After all, the use of borrowed money to acquire assets raises few eyebrows as long as the economy is expanding and the value of corporate assets is rising. If anything, companies were commended for taking on more debt because greater leverage translated to a higher return on equity.

But this cycle began to reverse when the bubble burst in 1990, and the Japanese economy entered a period of low growth and falling asset prices. Companies carrying heavy debt loads still had to service this debt even as earnings declined, putting their survival in jeopardy. In effect, firms had to pay down debt starting in 1990 not only to put their balance sheets in order, but also to bring leverage down to a level befitting an era of lower growth. In this sense, too, Japanese firms have made substantial progress in reducing leverage over the past fifteen years.

As Exhibit 2-2 illustrates, leverage remains somewhat higher at Japanese companies than at U.S. firms. But this is hardly cause for concern given Japan's much lower interest rates. With rates that are barely positive versus U.S. short-term rates of about 3 percent, Japan *should* have higher leverage, all else being equal.

What this means is that the 1990s were by no means a "lost decade." The phrase was coined to suggest that Japan made no progress during the 1990s and wasted precious time. But a look

at corporate financial statements makes it quite obvious that Japanese companies made huge strides. Their efforts have finally paid off in a clean bill of financial health, signaling an end to the bubble aftermath and high leverage. It would seem that the people using the term “lost decade” to describe the 1990s have never looked at balance sheet improvements made by Japanese companies.

It is also true, however, that economywide attempts to repair damaged balance sheets resulted in a fallacy of composition that threw the economy into a prolonged recession. Those who try to explain the recession using other economic indicators, while ignoring the drastic improvement in corporate balance sheets, will indeed see an economy in stasis: the budget deficit grew, growth slumped, and unemployment did not diminish. But an examination of corporate balance sheets will confirm that the “lost decade” was far from being lost.

Balance sheet recessions a blind spot for analysts and economists alike

This discussion begs the question of why so many otherwise knowledgeable people have ignored corporate balance sheets in their explanations for the Japanese recession. This “blind spot” can be attributed to two factors. First, only two groups of people typically look at balance sheets: the securities-house analysts who dissect businesses using financial data, and the bank loan officers who must decide whether to lend money to those businesses. The analysts’ job is to pore over balance sheets, but their focus is on the items that might affect the company’s share price or earnings. In the end, they need to determine only whether the firm’s stock is a ‘buy’ or a ‘sell.’ Similarly, loan officers’ only concern is whether the bank will eventually get its money back.

So although individuals in both groups might be aware that individual businesses are striving to repair their balance sheets, they would not consider the macroeconomic implications of a scenario in which many firms were paying down debt all at the same time. In this sense, both groups are missing the forest for the trees.

It is the job of economists to see the forest—that is, to envisage the broad economic impact of a shift in corporate

priorities. But as a rule, economists do not concern themselves with the balance sheets of individual enterprises. None of the leading macroeconomics texts, including those by Samuelson and Mankiw, note that companies with balance-sheet problems will seek to minimize debt. This is because the edifice of modern macroeconomic theory is built on the assumption of *healthy* corporate balance sheets. In this textbook world, companies are always forward-looking, are always seeking to maximize profits, and would never attempt to repay debt when interest rates are at zero.

But a nationwide plunge in asset prices causes the value of business assets to fall sharply below the value of the corresponding liabilities, violating the key assumption of healthy balance sheets. Firms respond by minimizing debt, which reduces aggregate demand, and tips the economy into recession. Conventional economics, however, is underpinned by the assumption that enterprises are forward looking, and it does not occur to those who have spent many years studying within this framework that firms might behave otherwise. Instead, they try to interpret the recession using the conventional economic perspective and analytical tools they have learned. As a result, they completely overlook balance-sheet problems.

The analysts' job is to pick apart balance sheets, but they give little thought to their greater significance. Meanwhile, "big picture" economists are working from the premise that corporate balance sheets are healthy, and do not bother to check whether reality conforms with their assumptions. As a result, balance-sheet problems are a blind spot.

Little more than ten years ago, I began to wonder whether the prolonged recession might be caused by balance-sheet problems. What piqued my curiosity was that corporate loan demand continued to fall even as the Bank of Japan lowered the policy rate from 8 percent to zero, and flooded the economy with liquidity. All of my training as an economist suggested that this kind of action by the central bank should turn the economy around. But nothing happened, because companies were choosing to pay down debt despite a zero interest rate and zero inflation. This led me to think that they must be worried about their credit ratings and balance sheets, and this ultimately led to the balance sheet recession concept presented here. But I did not actively seek out corporate balance sheets as a possible culprit; I simply happened across the

figures shown in Exhibit 1-3, and realized they might contain the answer to the puzzle.

Balance sheet recessions are silent and invisible

If I was able to discover the real cause of the recession in this way, why haven't more people done the same? The answer lies in a second factor.

Balance sheet recessions have some unfortunate and unpleasant characteristics. One is that those who are most aware of the problem are least willing to talk about it. The CEO of a company with negative net worth that is struggling to pay down debt would never discuss such matters with people outside the firm. This sort of talk could spark rumors that would cut off the firm's access to credit, and force it to settle accounts using cash.

Nor can management discuss these issues with employees. The moment it was announced that the company was technically insolvent, the best employees would leave for other businesses, jeopardizing the firm's survival. As a result, only a handful of people within the company know the true state of the balance sheet: financial directors, their immediate staff, and the CEO. These people want to keep the information under wraps, because they know the problem will eventually be resolved as long as the company remains cash flow positive. When speaking with outsiders, they will discuss only positive news, such as new products or planned investment. In the meantime, they continue to pay down debt.

Creditors do not want to discuss these issues, either. If it becomes known that a borrower is technically insolvent, loans extended to the company will become bad loans, and the lender will be forced by government regulators to cut off credit, and try to collect on existing loans. The bank, well aware that time will solve the problem as long as the business continues to generate cash, would naturally prefer to avoid this outcome. So the senior corporate executives and bankers who understand the nature of the problem refuse to talk about it. This makes balance sheet recessions invisible and inaudible.

An executive at a leading retail company once told me that a balance sheet recession is an executives' and bankers' recession. Only the executives who borrowed money and the bankers who

lent it truly understand the problem. But since neither will ever reveal this information to outsiders, external observers remain almost wholly oblivious to the situation.

Corporate efforts to pay down debt can explain all of the banking phenomena noted in Chapter 1: the shrinkage of the corporate-bond market, the inability of foreign banks to make significant inroads into the Japanese market, and the sharp fall in lending rates. Corporate bonds, for example, are simply another form of debt, and the first order of business for a firm saddled with debt overhang is to trim its liabilities as quickly as possible. It will not issue bonds no matter how low interest rates go. Foreign banks are also aware that their preferred customers, the blue-chip Japanese corporations with healthy cash flow, are also likely to be the most aggressive in paying down debt and cleaning up their balance sheets. They do not want to lend money to cash-flow-poor firms with holes in their balance sheets. No properly managed lender would go to the effort of opening branches in a country whose best companies are not only not borrowing, but actually reducing existing debt. This is why Japan did not see an influx of foreign banks during the long recession.

Finally, with an excess of willing lenders and a shortage of willing borrowers, market forces naturally sparked intensive price competition between the lenders. That led to ever-shrinking lending margins for the banks and falling interest rates in general. In summary, the balance sheet recession theory is consistent with all key financial indicators seen in Japan over the past fifteen years.

Banks were willing lenders throughout most of the recession

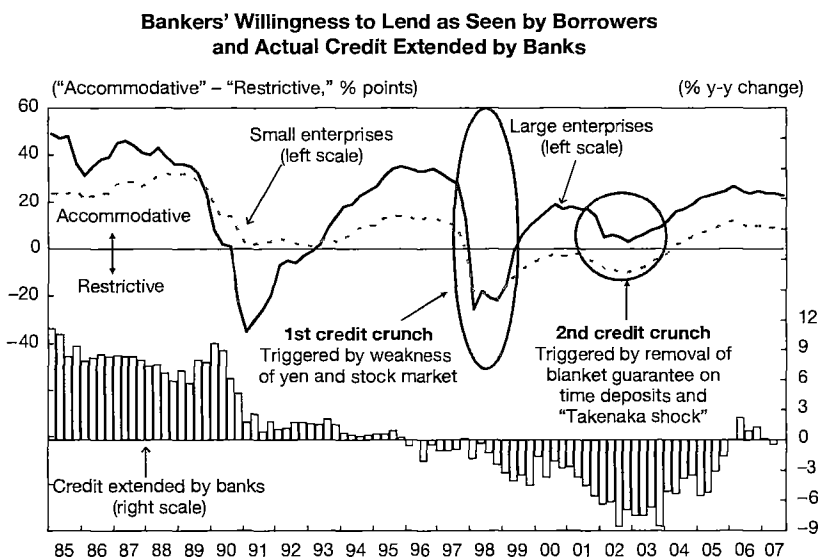
At this point, skeptics are likely to counter by saying that if corporate borrowing declined, it was only because banks were unwilling to lend. Indeed, there was a time when the credit crunch became a nationwide issue, and many companies did suffer from bankers' unwillingness to lend. But was it the primary cause of recession? As we see in Chapter 3, where Japan's experience is juxtaposed with that of the U.S. during the Great Depression, the answer depends on whether the problem was one of supply or demand of funds.

Fortunately, we have the Bank of Japan's quarterly *Short-Term Economic Survey of Principal Enterprises in Japan*, better known as the *Tankan*, to turn to. The survey covers some 10 000 companies and asks them, among other things, about banks' lending attitudes. Exhibit 2-3 shows trends in this item over time.

The survey specifically asks companies of all sizes whether banks are seeking to lend money or to call in loans. The question is significant because it targets the actual borrowers in Japan's economy. If banks were asked, they would naturally answer yes, of course we are lending money. Responding otherwise would expose themselves to charges that they had nonperforming-loan problems or worse. But it remains true that banks' lending attitudes do swing from one extreme to the other, and to determine actual conditions it is necessary to ask the borrowers.

Exhibit 2-3 shows that there was a severe credit crunch between 1997 and 1998 (the upright oval in the graph). Banks were also unable to lend to businesses during 2002 to 2003, a period referred to as the "Takenaka shock" (the circled portion on

Exhibit 2-3. Except for two occasions, bankers have been willing lenders



Note: Shaded area indicates period of monetary tightening by Bank of Japan.

Source: Bank of Japan, *Tankan* and *Loans and Discounts Outstanding by Sector*.

the right). Aside from these two periods, however, even businesses acknowledge that banks were willing lenders.

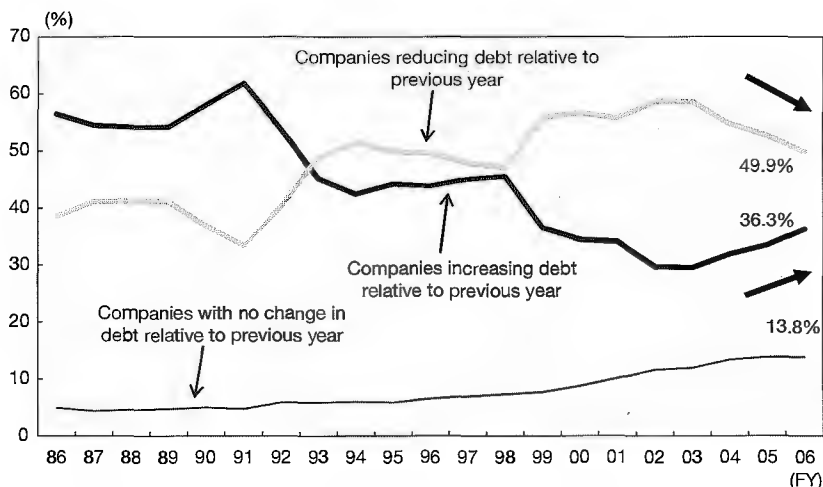
For example, large and small enterprises alike felt that banks were just as willing to lend in 1995 as at the peak of the bubble in 1988. Yet despite interest rates nearing zero (Exhibit 1-3), net fundraising in 1995 was negligible, compared with ¥15 trillion–¥25 trillion during the bubble period. The decline in corporate borrowing was clearly caused not by banks' reluctance to lend—a supply-side issue—but rather by a lack of *demand* for funds. And there was no demand for funds because the companies who would ordinarily be borrowing were all paying down debt.

This is not to say there was no credit crunch. It did exist, especially during the periods circled in the graph, and it caused a great deal of pain for affected companies and local economies. But it can explain only a fraction of the overall decline in bank lending. Most of the drop during the past fifteen years was due to a change in *borrower* behavior. Had the importance of these two mechanisms been reversed, the previously described financial phenomena—the shrinkage of foreign banks' market share, the decline in lending rates, and the contraction of the corporate-bond market—simply would not have happened.

Corporate fundraising trends contain signs of real economic recovery

Exhibit 2-4 shows trends in the percentage of listed Japanese companies reducing or increasing debt relative to the previous fiscal year. Ordinarily businesses are far more likely to increase than to decrease debt. But the situation in Japan began to change in 1990, and by 1993 more listed companies were paying down debt than were taking on new loans. In other words, most businesses had begun to reduce debt of their own accord long before there was any talk of a credit crunch or deflation. And they were doing so to repair their balance sheets.

The percentage of listed companies reducing debt year on year peaked in 2003, and began falling in 2004, while the number of firms taking on more debt began to rise. This is something we have waited fifteen years for, and is a strong indication that conditions have finally taken a turn for the better.

Exhibit 2-4. The proportion of listed companies paying down debt is finally falling

Note: Consolidated interest-bearing debt at end of fiscal year for all listed companies in Japan (excluding banks, securities companies, insurers, and other financial companies).

Source: NRI.

With nearly half of the listed companies still paying down debt, Japan is not yet out fully of the woods. But compared with the extremely dangerous situation through 2003, when both the amount of debt repayment and the percentage of companies liquidating debt were rising each year, and fewer and fewer businesses were borrowing, things are clearly improving owing to the balance-sheet improvements noted. That the corporate sector as a whole finally stopped reducing debt (Exhibit 1-3) in 2005 suggests that while many smaller firms may still be paying down debt, a substantial number of big companies are moving to raise funds.

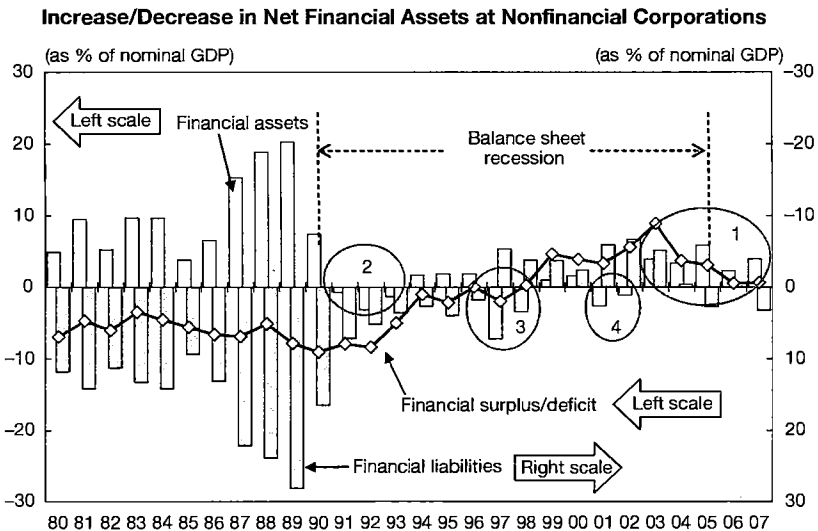
Japanese companies are now accumulating financial assets

In the aggregate, companies stopped paying down debt and started taking out new loans in 2005 (Exhibit 1-3). But as the flow-of-funds data in Exhibit 1-6a show, the corporate sector still has a financial surplus. At first glance, positive net fund-raising would seem to indicate a financial deficit, not a surplus. In other

words, the corporate line in Exhibit 1-6a should go below zero if firms are raising funds, but it is still above zero. The answer to this conundrum lies in the fact that even though some companies are starting to borrow money, more are replenishing the stock of financial assets drawn down during the long recession. This accumulation of financial assets is functionally equivalent to saving. Although Exhibit 1-3 shows what has been happening to the financial liabilities of the corporate sector, the corporate line in Exhibit 1-6a indicates the net result of what has been happening to both financial assets and liabilities of the corporate sector. Exhibit 2-5 shows corporate-sector financial assets and liabilities separately based on flow-of-funds data. In the circled area labeled "1," we can see that companies have clearly begun to accumulate financial assets.

This is happening because over the past fifteen years, Japanese companies have plundered their stocks of financial assets to offset

Exhibit 2-5. Japanese companies are moving to accumulate financial assets after paying down debt



Note: Figures adjusted for impact of debt succession related to Japan National Railways Settlement Corporation and national forest and field service special accounts (FY98) and of the privatization of the Japan Highway Public Corporation in FY05. Figures for FY07 are for FY06/Q3–FY07/Q2.

Source: Bank of Japan, *Flow of Funds Accounts*; Government of Japan, Cabinet Office, *National Accounts*.

losses and fund necessary expenditures. Some firms had to use the proceeds to reduce debt or even pay employees' salaries. These drawdowns were particularly large in 1991 to 1993 ("2" in Exhibit 2-5), 1997 to 1998 ("3"), and 2001 ("4"). These three periods coincide with sharp reversals in the economy and suggest that they were extremely difficult times for businesses. Just like the struggling households mentioned in Chapter 1, businesses had to draw down their savings to make ends meet.

Businesses have now cleaned up the liability side of their balance sheets, but assets remain below the levels deemed appropriate by their managers. Net fundraising by Japanese businesses now stands at about 3 percent of GDP (Exhibit 2-5). However, the corporate sector as a whole is accumulating financial assets to the tune of nearly 4 percent of GDP a year. Viewed in total, therefore, the corporate sector is still running a financial surplus equal to about 1 percent of GDP. This is why the sector appears as a net supplier of funds in Exhibit 1-6a.

It should be noted that even though firms are still accumulating financial assets, the mind-set of corporate executives has changed dramatically from when they were paying down debt. Debt repayment was truly a struggle for survival, as firms tried to climb out of negative equity as quickly as possible. Most firms have now put that problem behind them, and as a result many have begun actively hiring new college graduates. They are also pushing forward with the new business initiatives that have been shelved for the past fifteen years. But after their traumatic debt-repayment experience, these firms also want to make sure that they accumulate enough financial assets to cushion themselves from future shocks. This is why corporate executives are forward-looking in their hiring and investment decisions, while at the same time using cash flow to rebuild their stock of financial assets.

More time is needed before the corporate sector becomes a net investor

The next question is how long this process of financial-asset accumulation will last. Given the devastating experiences these firms have gone through to repair their balance sheets, it will take a while before they feel comfortable with both their financial assets and liabilities. The duration of asset accumulation is also difficult

to predict because managers at each company have their own, widely varying ideas on how large the asset cushion should be. Some of those who spent the past fifteen years struggling to pay down debt may have developed a lifelong aversion to borrowed money, and may therefore want to hold a relatively large amount of financial assets. Others may feel that these assets should be kept to a manageable level. Still others are re-establishing cross-shareholdings to fend off hostile takeovers in response to the recent change in Japanese regulations that made it easier for foreign companies to take over Japanese firms. This last item, however, has come under strong attack from foreign shareholders of Japanese firms for obvious reasons. In the end, the level of assets deemed appropriate by each firm is likely to become evident to outside observers only when they stop accumulating them.

In spite of this process of accumulation, the surplus of funds in the corporate sector has fallen sharply, as indicated by the bold black arrow in Exhibit 2-5, and in that sense progress has clearly been made. The decline in land prices that triggered the balance sheet recession has also been reversed, with property prices in urban areas rising for the first time in fifteen years. These are all indications that the unfolding recovery is real. All that remains now is to bring corporate financial assets back to a desirable level.

2. Tax receipts during a balance sheet recession

Premature fiscal consolidation triggered second recession

The recovery is unlikely to be derailed as long as the government does not make any mistakes in the area of fiscal policy. We must keep our eyes on the government, because the corporate sector is still in financial surplus. So there is still a deflationary gap, albeit a smaller one. Japan's economy is finally emerging from the long balance sheet recession, but government fiscal stimulus will be required until it recovers completely.

While fiscal consolidation is necessary under ordinary circumstances, it is never the right prescription during a balance sheet recession, which occurs only after the collapse of a nationwide asset-price bubble, a once-in-several-decades kind of event. There are few things as dangerous as premature attempts at fiscal

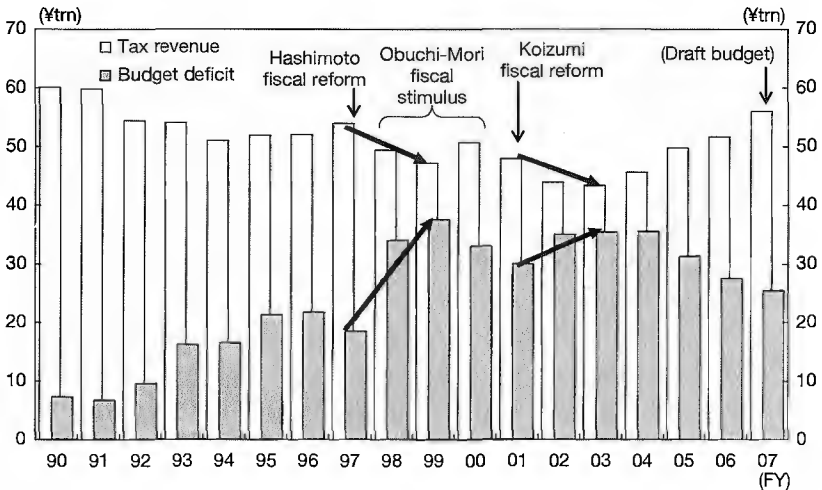
consolidation during such a recession. Any attempts to reduce the deficit during or immediately after a balance sheet recession must be based on a solid understanding of the recession's unique characteristics.

Under ordinary circumstances, when private-sector firms have healthy balance sheets and are maximizing profits, the private sector will snap up any funds made available by a reduction of the government's budget deficit. Since the private sector is a more efficient user of funds than the government, a reduction in government borrowing matched by an increase in private-sector borrowing should contribute to a more efficient allocation of resources and higher economic growth. This is why government borrowing, which crowds out private-sector investments, is considered undesirable.

During a balance sheet recession, however, the private sector is unable to borrow the money made available by the government's fiscal consolidation. This means that aggregate demand and the money supply will both shrink, almost dollar for dollar, by the amount of fiscal consolidation. Moreover, resources formerly taken up by the government will go unused, which is the worst form of resource allocation. Fiscal consolidation at a time like this sparks a vicious cycle of economic deterioration, falling tax receipts, and rising budget deficits. This phenomenon is illustrated in Exhibit 2-6, which shows the relationship between tax revenue and budget deficits.

In 1997, the Hashimoto administration became the first to attempt a program of fiscal consolidation in the post-bubble era. At the time, neither the Ministry of Finance nor international bodies such as the IMF and OECD were aware that Japan was in the midst of a balance sheet recession. They argued that the massive fiscal stimulus had not produced economic improvement because money was being wasted on unnecessary investments, and called for these expenditures to be discontinued. Prime Minister Hashimoto responded with a four-pronged plan in FY97 to reduce the fiscal deficit by ¥15 trillion. The plan involved raising the consumption tax from 3 percent to 5 percent, increasing taxpayers' share of social security costs, ending a special income tax cut, and shelving a large supplementary budget. In FY96, the budget deficit stood at ¥22 trillion.

Exhibit 2-6. Premature fiscal reforms in 1997 and 2001 actually depressed tax revenue and increased deficits



Note: Tax revenues for FY06 and FY07 are before the transfer of revenue to local governments.

Source: Compiled from Ministry of Finance budget documents.

As Exhibit 2-6 shows, however, the eventual result was a far cry from the expected ¥15 trillion deficit reduction. Although the revenue shortfall seemed to decline in FY97, the first year of the reforms, the economy then proceeded to shrink for five straight quarters, in what turned out to be the economy's worst postwar meltdown. The downturn torpedoed Japan's banking system, and brought about the credit crunch shown in Exhibit 2-3. This outcome was hardly surprising if we remember that the economy was staying afloat only because the government was borrowing and spending the savings of the household sector. Once the government stopped doing so, the economy was bound to fall into the kind of deflationary spiral described in Chapter 1, with the original income of ¥1,000 shrinking to ¥900, ¥810, ¥729, and so on. In effect, measures intended to reduce the deficit sent the economy into a tailspin.

The outcome of the Hashimoto administration's policy is shown clearly in Exhibit 2-6. Tax revenue fell rather than rose, despite the higher consumption tax, and the fiscal deficit expanded sharply. Instead of reducing the deficit by ¥15 trillion, the measures caused it to increase by ¥16 trillion, to ¥38 trillion,

in FY99. This was an excellent but sad example of what happens when a government tries to pursue fiscal consolidation during a balance sheet recession. The economy falls into utter chaos, tax revenue plummets, and in the end the deficit actually increases.

Prime Minister Hashimoto later realized his mistake, and submitted a large supplementary budget in June 1998. But the policy turnaround was not enough to mend the gaping wound that had been opened in the economy. Ultimately, conditions did not stabilize until an even larger fiscal stimulus was implemented by Prime Minister Obuchi. Once the economy regained its balance with the aid of government spending, tax receipts started to rise, and the budget deficit began to drop. Prime Minister Mori continued along this path, but before the work could be finished, Junichiro Koizumi swept into office, championing fiscal consolidation and instituting a ¥30 trillion cap on new government-bond issuance.

If the sum of household savings and net corporate debt repayment is less than ¥30 trillion, capping government-bond issuance at ¥30 trillion will not produce a deflationary gap because government borrowing is sufficient to offset the entire leakage to income stream. But when the Koizumi administration announced this cap, the collapse of the global IT bubble and the events of September 11, 2001, had pushed household savings and corporate-debt repayments sharply higher, creating a deflationary gap far in excess of ¥30 trillion. As Prime Minister Koizumi filled only ¥30 trillion of the shortfall, the residual gap began to weigh on the economy. The economy deteriorated sharply, and share prices plunged in the first two years of the new administration (2001–2002) as a result of this premature attempt at fiscal consolidation.

The results are illustrated in Exhibit 2-6. Tax receipts shrank, leaving major revenue shortfalls in both FY01 and FY02, and the budget deficit ballooned to ¥35 trillion. In the end, the Koizumi administration was unable to fulfill its pledge of capping new bond issuance at ¥30 trillion even once.

In 2003, the prime minister finally gave in and publicly abandoned his campaign pledge, allowing the “automatic stabilizer” function of government spending to kick in. This term refers to the natural tendency of government spending to stabilize the economy. When times are good, tax revenue grows faster than GDP, and helps to cool the economy. When times are bad, unemployment benefits and other government expenditures

increase as tax receipts fall, providing a natural stimulus as the government spends more than it takes in. Once the Koizumi administration abandoned its efforts to reduce the deficit, fiscal policy resumed acting as an automatic stabilizer, and began to have a positive, rather than negative, effect. The economy grew, tax receipts rose, and the deficit shrank.

A balance sheet recession is a rare phenomenon, occurring only once every several decades. When it happens, the one thing a government must *not* do is pursue fiscal consolidation. The unfortunate consequences of this error are plainly visible in the examples of 1997 and 2001.

Bank of Japan and Ministry of Finance have begun to understand balance sheet recessions

In light of the preceding discussion, how great is the risk that today's politicians and bureaucrats will once again attempt premature fiscal consolidation? Unfortunately, with no economics textbooks mentioning the concept of balance sheet recession, the danger that the economic orthodoxy will again carry the day can never be underestimated.

The Abe administration, which took office at the end of September 2006, announced early on that its economic policy would be based on the slogan "no fiscal reform without growth." Not only was this motto eminently suited to Japan's current economic situation, but it suggested that the new administration had learned from the Koizumi administration's mistake, whose slogan was "no economic growth without structural reform." The key component of the Koizumi administration's structural reforms was the ¥30 trillion cap on new bond issuance, a serious policy failure that weakened the economy and increased the budget deficit. If the Abe slogan was indeed a reaction to the Koizumi administration's failure, it suggested that the lessons of 2001 to 2003 had been learned.

In less than a year, however, Abe and all of his ministers (except Foreign Minister Taro Aso) had fallen prey to economic orthodoxy, and were indicating that fiscal reform had become the administration's first priority. They stubbornly maintained this position even after the LDP's devastating election defeat in August 2007, when the rural voters who had borne the brunt of

fiscal reform delivered a stunning blow to the ruling party. Yasuo Fukuda, who succeeded Abe, appears slightly less inclined toward fiscal consolidation than his predecessor.

Even though the government seems to be slipping back into economic orthodoxy, the Bank of Japan seems to have a good understanding of this danger. Exhibit 2-7 presents verbatim (translated) comments made by Bank of Japan Governor Fukui at a meeting of the Research Institute of Japan in February 2005 in response to comments by Osaka University Professor Masaaki Honma, then serving as a private-sector representative to the Council for Economic and Fiscal Policy (CEFP). In this debate, Prof. Honma, known as the government's "brain" on economic issues, argued that the government would proceed with fiscal-consolidation efforts, and to the extent that these efforts weighed on the economy, the Bank of Japan needed to adopt a more accommodative monetary policy than it otherwise would have. This demand was summarily rejected by Governor Fukui, who argued that just because the government cuts spending does not mean the central bank must ease policy by an equivalent amount. He then went on to express his concerns about fiscal consolidation, noting that "consolidation may not be a major problem as long as the government's fiscal reforms are consistent with the recovery in private-sector demand for funds."

As the real significance of Mr. Fukui's statement is rather difficult to discern from the statement in Exhibit 2-7 alone, a numerical example may be useful here. Assume that in 2005 the government supported the economy by borrowing and spending ¥30 trillion. If the private sector increased its borrowing by ¥5 trillion in 2006, the government could reduce its own borrowing by the same amount without upsetting the stability of the overall economy. In other words, it would be free to raise taxes or cut spending by ¥5 trillion. However if the private sector borrowed only ¥5 trillion more, but the government cut spending or increased taxes by ¥8 trillion, the result would be a ¥3 trillion deflationary gap. This is what Governor Fukui was referring to when he said fiscal reforms must be consistent with the recovery in private-sector demand for funds.

Put another way, what the Japanese economy has lacked more than anything else for the past fifteen years is demand for funds from the corporate sector. The government stepped in to

Exhibit 2-7. The Bank of Japan starts to reject unreasonable government demands

From Q&A Session After Speech by Toshihiko Fukui on February 28, 2005

**Osaka University
Professor Masaaki
Honma (private-sector
representative to CEF)**

Monetary policy would become increasingly important as the government engaged in fiscal retrenchment. What role could monetary policy play in stimulating private-sector demand and thereby offsetting the negative impact of fiscal retrenchment?

Governor Fukui

The relationship between the government and the central bank is not a simple one in which the Bank of Japan responds to any cut in government spending by pulling out an abacus and easing an equivalent amount. Our main task is to ensure that the government and the central bank are singing from the same hymn sheet in terms of stabilizing expectations. In some cases this may involve confrontation. We want to approach this issue very carefully ... Earlier I noted that the government should only embark on fiscal consolidation once it has been confirmed that the economy is on a sustainable recovery path. Private-sector demand for funds remains weak.... The economy is currently going through a soft patch, but **this may not be a major problem as long as the government's fiscal reform measures are consistent with the recovery in private-sector demand for funds. This is what I would like the government to understand.**"

Source: Jiji Press, *Kaigai Jousei Chousa-kai deno Fukui Sousai no Ichi-mon Ittou Youshi* (Summary of Q&A Session Following BOJ Governor Fukui's Speech to Research Institute of Japan), February 28, 2005.

prop up the economy by borrowing and spending because no one else was willing to borrow household-sector savings and net corporate debt repayments, despite interest rates approaching zero. Governor Fukui is saying that the government is free to engage in deficit-reducing efforts *once private-sector borrowing picks up*. His comments suggest that the Bank of Japan fully understands the balance sheet recession concept.

Although many officials at the Ministry of Finance continue to argue first and foremost for fiscal consolidation, the budget deficit

attracts less attention today than it did four or five years ago. And despite the lip service paid by politicians, Ministry of Finance officials appear less adamant about reducing the deficit than before. This suggests the possibility that they, too, have begun to understand the current realities of the Japanese economy.

In 2004, I was asked by the Ministry of Finance to present a seminar. When I arrived at the ministry, I found the head of the all-powerful Budget Bureau waiting for me with about twenty of his subordinates.

Having criticized the Ministry of Finance's obsession with fiscal-consolidation on many occasions in the past, I was extremely nervous when I began the talk. At the outset, though, I explained that I was not a Keynesian. Keynesians believe the government must administer fiscal stimulus when the economy turns down. In contrast, I recommended stimulus not because the economy was weak, but because Japan had contracted the extremely rare economic disease known as a balance sheet recession. An ordinary downturn can be dealt with using monetary policy, but in this type of recession, a lack of borrowers renders monetary policy powerless. Hence the need for fiscal policy. I made this argument in a presentation lasting an hour and fifteen minutes using data similar to those featured here. Surprisingly, the officials seemed to grasp the material quite well (although having not tested them on the subject, I cannot say *how* well).

In the end, they had just one request: "When corporate balance sheets are cleaned up and businesses start borrowing again, the government will have to put its fiscal house in order. When that time comes, we look forward to your support." I duly promised my full support, and assured them that when Japan reached that stage, I would become the nation's leading proponent of fiscal consolidation. Based on these experiences, I believe that both the Ministry of Finance and the Bank of Japan now have a much better understanding of this type of recession.

Tax revenue during a balance sheet recession

While premature fiscal consolidation must be avoided at all costs, even a "natural" increase in tax receipts must be treated with caution during the recovery phase from a balance sheet recession. This is because tax revenue during this type of recession exhibits

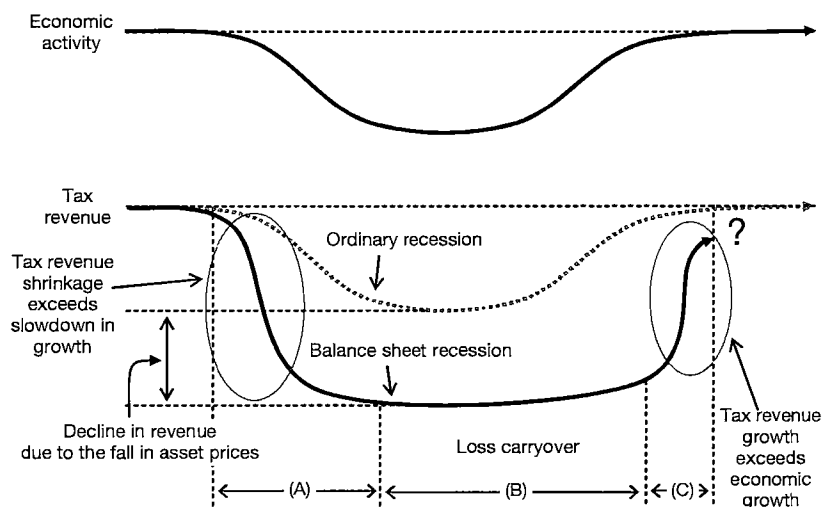
a pattern that is utterly different from the one observed during ordinary recessions.

Tax receipts totaled ¥60 trillion at the peak of the bubble in 1990. By 2005, Japan's nominal GDP had grown by 13 percent, and recurring profits in the corporate sector (excluding financial firms and insurers) had expanded by 48 percent. Under ordinary circumstances, a 13 percent increase in GDP should produce a similar increase in tax receipts. Yet tax revenue was just ¥49 trillion in 2005. This anomaly is another characteristic of balance sheet recessions.

The long recession was triggered by a drop in asset prices, which prompted businesses to begin paying down debt, which in turn reduced aggregate demand, thereby depressing the economy. The decline in tax receipts during a balance sheet recession therefore has two drivers: falling asset prices and decelerating economic activity. As a result, tax revenue falls far more steeply than the drop in economic activity alone would suggest.

Exhibit 2-8 illustrates the different behavior of tax revenue during a balance sheet recession and an ordinary recession. Assuming that economic activity follows the line at the top of the graph, tax receipts during an ordinary recession would follow

Exhibit 2-8. Tax revenue in a balance sheet recession



Source: NRI

the roughly parallel path indicated by the dotted line in the middle of the graph. In a balance sheet recession, however, the decline in economic activity is accompanied by a drop in asset prices, which causes tax revenue to drop far more than the fall-off in economic activity would suggest, as shown by the line at the bottom of the figure.

Moreover, it was in the midst of this plunge in asset prices that Japan made the gratuitous decision to adopt mark-to-market accounting from the fiscal year ending March 2001. Until then, companies carrying unrealized losses on assets were not required to recognize them as losses. But under the new system, they had to recognize even unrealized losses. The firms concluded that if they had to show losses in any case, it would be advantageous from a tax perspective to sell the assets and realize the loss, which could then be used to offset profits. As a result, companies moved en masse to sell off assets. The huge losses that were realized took a heavy toll on corporate profits and, by extension, tax revenue. As a result, tax receipts fell by far more than would have been expected from GDP data alone (phase A in Exhibit 2-8).

Because the losses due to the fall in asset prices were so large, and because companies carried these losses forward, tax receipts remained depressed for a long time after the broader economy and corporate profits had recovered (phase B in Exhibit 2-8). Firms were basically able to offset profits with accumulated losses from the past, and thus avoid paying taxes on recent profits. An excellent example is provided by the banks, which have paid little tax despite reporting large profits. In the end, the greatest victim of mark-to-market accounting was the national treasury.

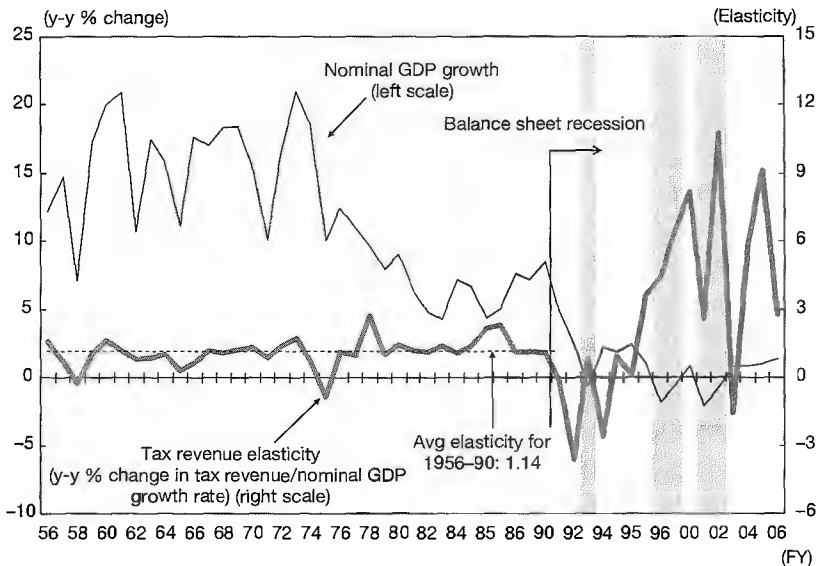
The continued weakness in tax revenue has led many to call for a tax hike. What should be remembered, however, is that the Japanese tax code allows companies to carry forward losses for a maximum of seven years.¹ After that, they must once again pay full taxes on their earnings. Tax revenue therefore tends to surge once the loss carry-forward period expires, causing revenues to grow far faster than GDP. Japan's economy has already entered this stage (phase C in Exhibit 2-8).

In 2003, for example, the medium-term budget forecast submitted by the Ministry of Finance to the Fiscal System Council projected a budget deficit of ¥43 trillion–¥44 trillion in FY05.² But the actual deficit for FY05 was just ¥31.3 trillion, some ¥12 trillion

less than the forecast. This huge discrepancy occurred mainly because the Ministry of Finance was unaware that the nation was in a balance sheet recession, and it had not considered the possibility of periods such as phase C in Exhibit 2-8. The ministry was estimating future tax revenue using 2003 revenues as a base and applying the traditional tax elasticity to GDP (1.1) to its projections of GDP growth. (An elasticity of 1.1 means that for every 1 percent increase in nominal GDP, tax revenue will grow by 1.1 percent.)

But a decline in tax receipts due to a fall in asset prices is a temporary adjustment. Once the adjustment process is complete, tax revenue resumes moving in line with economic activity. In other words, tax revenue elasticity during a balance sheet recession fluctuates greatly during the adjustment process (Exhibit 2-9). Japanese tax revenue for 2005 grew at an annual pace of 7.6 percent in contrast to GDP growth of just 1.0 percent, producing an extremely high elasticity of 7.6, indicating that the Japanese economy has already entered phase C in Exhibit 2-8.

Exhibit 2-9. Pre-1990 tax-revenue elasticity is no longer relevant



Note: Shaded areas indicate years in which both the y-y % change in tax revenue and nominal GDP growth rate were negative, resulting in a positive elasticity.

Source: Government of Japan, Cabinet Office, *National Accounts*; Ministry of Finance budget materials.

As noted earlier, Japan's GDP in 2005 was 13 percent larger than in 1990, at the peak of the bubble, and corporate profits (excluding financial corporations and insurers) were a full 48 percent higher. In spite of this, FY05 tax revenue amounted to just ¥49 trillion, down from ¥60 trillion in 1990. This may also be interpreted to mean that tax revenue is likely to rise toward ¥60 trillion in the years to come. Given the various tax cuts implemented in the intervening years, however, it is difficult to say whether tax receipts *will* recover to their 1990 level. Nevertheless, with both corporate profits and GDP up substantially from 1990, it is safe to say that tax revenue will not remain at its current level forever.

It is difficult to forecast future tax revenue when tax receipts are growing rapidly and tax elasticity is fluctuating widely. In these circumstances, any discussion of fiscal consolidation ought to be preceded by a calculation of how much the budget deficit would shrink if tax receipts returned to normal levels.

After all, the necessary tax hikes and attendant risks to the economy will vary greatly depending on whether the deficit is projected to be ¥43 trillion or ¥31 trillion. For example, if the fiscal reformists had had their way in 2003, taxes would have been raised enough to eliminate a deficit that was expected to rise to ¥43 trillion two years later. Had the government implemented such a large tax hike, and abandoned its role as the borrower of last resort, the economy would most likely have fallen into a deflationary spiral as bad or worse than that which followed the misguided fiscal consolidation of 1997. With net debt repayments by the corporate sector far larger in 2003 than in 1997, the damage resulting from a tax hike in 2003 would likely have been correspondingly greater.

Instead, the government chose to borrow and spend the savings of the household sector and the net debt repayments of the corporate sector, thereby stabilizing the economy. In this sense, the government was right not to pursue fiscal consolidation over the past few years and instead to allow fiscal expenditures to act as an automatic stabilizer. This enabled the economic recovery and the resulting surge in tax receipts.

Assume for the sake of argument that a structural deficit of ¥20 trillion will remain once tax revenue normalizes. In this case, the necessary tax hike would be far smaller than that required to offset a shortfall of ¥43 trillion. If private-sector loan demand picks up, there is a good chance that the Japanese economy will be

strong enough to absorb the tax hike and still move forward. That is exactly the condition needed for deficit reduction to succeed.

Telling people that tax revenue has yet to return to normal levels naturally engenders certain expectations. Specifically, it encourages hopes that the general government may eventually run a surplus, as it did during the bubble period (see Exhibits 1-6a and 1-6b). While these expectations are understandable, the reality is not so forgiving. Not only have many tax reforms—including tax cuts—been implemented over the past fifteen years, but the ageing population is driving a steady increase in social security costs and related expenditures. In these areas, fundamental reforms must be implemented without further delay.

That said, the actions needed to improve the long-term structural efficiency of government expenditures such as social security should be separated from those needed to reduce the one-time increase in the deficit resulting directly from the balance sheet recession. The latter actions in particular could trigger a repeat of the events of 1997 unless the government first confirms that private-sector loan demand has recovered and tax revenue has returned to normal levels.

Surge in tax revenue when loss carry-forwards expire is also a trap

Using the large budget deficit to justify a tax hike without understanding the nature of balance sheet recessions creates not only an unconvincing argument but a dangerous one. Even the long-awaited rise in tax revenue presents a major risk.

Many readers might assume that higher tax revenue and a corresponding decline in the budget deficit are something to be welcomed, not feared. But the recent growth in tax receipts differs in one respect: it is not in step with the economic recovery.

Under normal circumstances, a 3 percent increase in nominal GDP should produce an increase in tax revenue of slightly more than 3 percent. Because the growth in tax receipts in this case is the direct result of economic growth, there is no risk that it will slow the economy. In 2005, however, Japanese tax revenue grew by 7.6 percent despite nominal GDP growth of only 1.0 percent. Although slightly more than 1.0 percent of the growth in tax receipts was attributable to the recovery, the remaining 6.6

percent growth was due to taxes paid by companies whose loss carry-forwards had finally expired. This portion of the increase, therefore, was due entirely to the tax code's seven-year loss carry-forward provision.

This implies that companies with loss carry-forwards were not paying full taxes on their profits, and were therefore enjoying higher-than-normal free cash flow. Because they did not have to pay taxes on their earnings, they were able to spend more on other areas, and this spending may have played an important role in supporting the economy.

Moreover, when tax revenue remained depressed despite an increasingly buoyant economy, the government had no choice but to continue serving as the borrower of last resort to fill the shortfall. So both the corporate sector and the public sector were making a significantly larger contribution to the economy than they would have without the loss carry-forwards.

The end of these carry-forwards means that a portion of the funds that businesses had earmarked for capital investment or other uses will now be used to pay taxes, reducing effective demand in the private sector. The increase in tax receipts will also prompt the government to borrow less. But as noted, it has been the government's willingness to borrow (and spend) that has sustained both GDP and growth in money supply. If rising tax revenue diminishes the government's role as borrower of last resort, therefore, a deflationary gap may re-emerge. This, together with reduced demand from the private sector, could weaken the forward momentum of the economy.

Put differently, Japan's economy has punched above its weight for the past several years because so many companies had unnaturally low tax bills. But from this point onward, the opposite is likely to be true as long as tax revenue is growing faster than GDP.

Sustained growth depends on recovery in private-sector loan demand

The adverse economic impact of this sharp rise in tax receipts will depend not only on the magnitude of the increase, but also on the recovery in private-sector loan demand.

Bank of Japan Governor Fukui was quoted as saying that fiscal consolidation must be "consistent" with the recovery in

private-sector loan demand. He was referring not only to new fiscal-consolidation policies, but also to the natural growth in tax receipts described above. If the sum of both exceeds the increase in private-sector loan demand, the economy may again experience a deflationary gap. On the other hand, as long as private-sector loan demand rises accordingly, even a sharp increase in tax revenue gives little cause for concern.

Consider a business whose loss carry-forwards have expired. If it borrows an amount equal to its additional tax bill to keep investment expenditures at current levels, the increase in private-sector loan demand will equal the increase in the government's tax receipts, with zero net impact on the economy. But if the company chooses to offset the higher tax bill by reducing investment or other expenditures, aggregate demand will decrease and the economy will suffer.

What is the current state of private-sector loan demand? Although corporate borrowing is increasing, as seen in Exhibit 1-3, the corporate sector as a whole is still in financial surplus because companies are adding to their financial assets: in short, they are supplying funds to the economy instead of borrowing them. This means private-sector loan demand has yet to recover sufficiently, which is why interest rates, especially long-term interest rates, remain low. A sharp growth in tax revenue driven by the expiration of loss carry-forwards at a time like this must be closely watched because it has the potential to create another deflationary gap, if it has not done so already.

How free cash flow was being used is also important

Whether a deflationary gap is created also depends on how companies were using the artificial boost in free cash flow from the loss carry-forwards. If the excess cash flow was being used to pay down debt, then it was not contributing to effective demand, and its diversion to tax payments would not reduce demand in the broader economy. But if it was being invested or was otherwise adding to real demand, its absorption by taxes would reduce overall demand in the economy.

If the growth in tax receipts is taking a toll on the economy, the government will need to take measures to return those revenues to the economy's income stream. In particular, it will need to fund public works investment or implement tax cuts, rather than

using the entire tax windfall to redeem bonds. Measures to increase demand for funds from the corporate sector, such as halving depreciation periods for investments made within the next five years, would be particularly useful in this regard. Without such corrective measures, the broader economy may once again be derailed.

There is no economic justification for targeting a primary fiscal balance by 2011

Given the uncertainty surrounding the behavior of tax revenue in an economy emerging from a balance sheet recession, the current government's target of achieving a primary fiscal balance by 2011 should not be treated as a hard-and-fast goal. Not only does the timetable have no theoretical justification, but it could cause a greater economic tragedy by preventing the government from adopting policies tailored to actual conditions.

It might have been possible to set a target for achieving a primary surplus if Japan had previously experienced other balance sheet recessions. This could have made it possible to use quantitative analysis to forecast, say, how many years it would take for corporate loan demand to return to normal once the debt overhang was eliminated. But because Japan has never been through one, such estimates are very much trial and error. Consequently, there is no basis whatsoever for setting 2011 as the target date: if private-sector loan demand picks up before this deadline, the government should push ahead with fiscal consolidation; if, on the other hand, a recovery in loan demand is delayed, fiscal consolidation should be postponed. If the government ignores actual conditions in the economy, and blindly pushes ahead with fiscal consolidation, we will have a replay of 1997 and 2001, when the economy tanked, tax revenue fell, and the fiscal deficit actually grew. In this sense, the Abe administration's initial slogan of "no fiscal consolidation without growth"—that is, no spending cuts or tax hikes before private-sector loan demand recovers—was right on the money.

During a balance sheet recession, too much fiscal stimulus is better than too little

A balance sheet recession is characterized by a deflationary gap equal to household savings plus net corporate-debt repayment.

Although the government can fill this shortfall, it is extremely difficult to determine in advance exactly how much the government must borrow and spend to do so. This is because corporate executives at troubled firms are unwilling to discuss financial matters with outsiders, making it difficult for external observers to gauge the extent of balance-sheet problems at individual firms or the pace at which they intend to pay down debt.

Moreover, once a deflationary gap emerges because of insufficient government borrowing, dealing with it can entail massive costs. After the Hashimoto administration's ill-conceived 1997 push for fiscal consolidation, for example, the economy went into meltdown, and output contracted for five consecutive quarters. The budget deficit not only did not decline, but actually grew by ¥16 trillion.

The point is that during a balance sheet recession, the problems resulting from too little fiscal stimulus are far more serious than those caused by too much. The latter are similar to walking with a cane even after a broken leg has healed; the former to walking, or even running, when the bone has yet to mend. Once an economy falls into this type of recession, therefore, it is always safer to err in favor of too much stimulus than too little.

3. Interest rates after a balance sheet recession

Higher tax revenue reduces the fiscal deficit, keeping long-term interest rates low

The dramatic growth in tax revenue as an economy pulls out of a balance sheet recession also has major implications for interest rates. First, any rebound in tax receipts helps to cap the rise in long-term interest rates. All else being equal, higher tax revenue reduces the government's need to borrow, leading to lower interest rates. If market expectations of continued large fiscal deficits have pushed long-term interest rates higher, interest-rate forecasts will also have to be revised down because the actual deficit is shrinking more than expected.

As noted, the medium-term budget forecast published by the Ministry of Finance in 2003 predicted a fiscal deficit of ¥43 trillion–¥44 trillion for Japan in FY05. In the event, however, the deficit came in at ¥31.3 trillion, or some ¥12 trillion less than expected. Tax revenue is still rising.

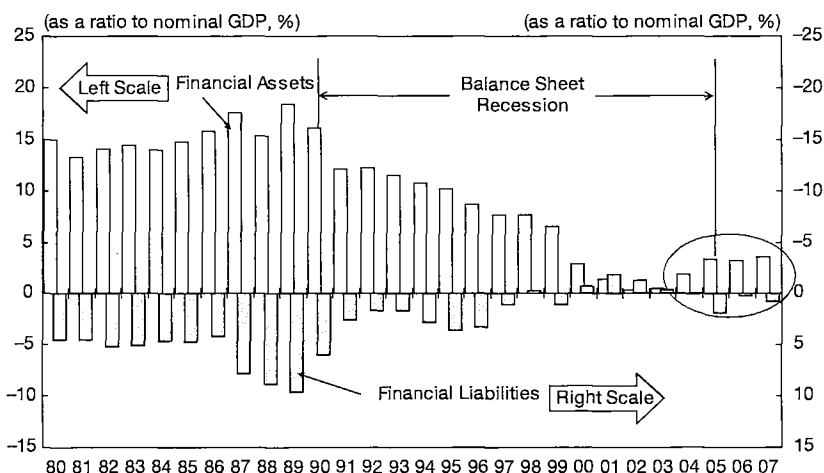
Bond-market participants who had been pricing Japanese government bonds based on the assumption of ¥40 trillion-plus budget deficits will need to take this new reality into account, and revise their views of interest rates. These altered expectations should also help to push interest rates lower.

Long-term interest rates capped as lower budget deficits offset higher private-sector loan demand

Long-term interest rates in Japan are still languishing below 2 percent despite a sustained recovery in the economy, rising land prices in urban areas, and an end to the Bank of Japan's zero-interest-rate policy (ZIRP).

One reason interest rates remain so low is that private-sector loan demand is recovering quite slowly in spite of the rally in the broader economy, while the government's need to borrow is declining due to rising tax revenue. The recovery has also prompted an increase in household savings, as many households finally have enough income to save. After having drawn down so much of their savings to make ends meet during the fifteen-year recession, their first priority now is to rebuild their depleted savings. They are

Exhibit 2-10. Japanese household savings are recovering



Note: For fiscal '07 figures, 4 quarter averages ending with 2Q/'07 are used.

Source: Bank of Japan, *Flow of Funds Accounts*, and Government of Japan, Cabinet Office, *National Accounts*.

therefore doing exactly the same thing that firms are doing with financial assets. This is also one reason increased income and employment have not yet produced a similar increase in domestic consumption. Household financial assets and liabilities are shown in Exhibit 2-10.

If the increase in private-sector loan demand is equal to or less than the reduction in the deficit due to higher tax receipts and the increase in household savings, interest rates have no reason to rise from a strict supply/demand perspective. If anything, the extremely low current yields on government bonds suggest that government borrowing needs may be declining by more than the private sector's funding needs are increasing. This is *not* good news for the economy.

Debt-rejection syndrome keeps interest rates low

The private sector's funding needs are growing so slowly because many of the corporate executives who spent the past decade or more struggling to pay down debt and clean up their balance sheets have developed a deep-seated aversion to debt. This "debt-rejection syndrome" will leave firms hesitant to take out new loans even after their balance sheets have been restored to health. Moreover, with the cash previously used to pay down debt now at firms' disposal, substantial investment is possible without borrowing. Taken together with strong corporate cash flow, this suggests that any recovery in private-sector loan demand is likely to be gradual, which in turn will help to keep interest rates in check.

If companies refuse to take on new debt, but do choose to invest the money that was being used to pay down debt, effective demand will increase, while demand for funds will remain lackluster. In this world, nominal GDP growth may well exceed long-term interest rates. This relationship between interest rates and GDP growth rate is likely to persist until businesses start borrowing again.

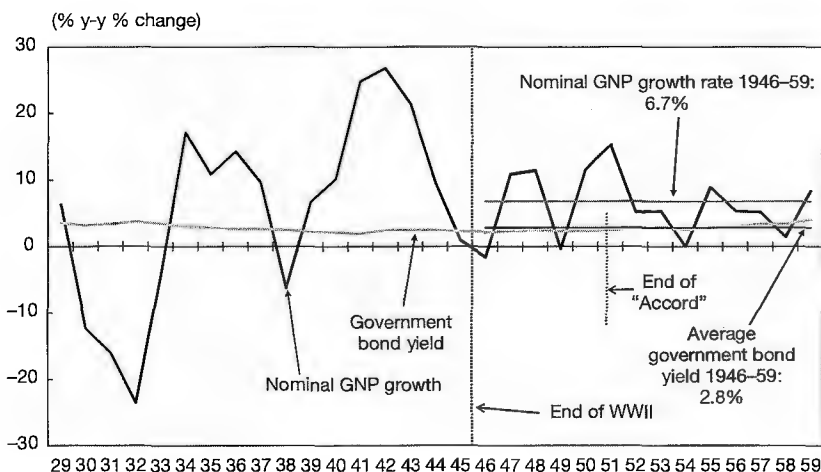
The U.S. has also experienced the phenomenon of interest rates being held in check by a corporate aversion to debt in the wake of an asset-price bubble collapse. After the IT bubble burst in 2000, many U.S. companies refused to borrow, even after they had finished cleaning up their balance sheets. In 2004, Fed

Chairman Alan Greenspan openly wondered why companies were not borrowing as much as they should have been at that stage of the business cycle.³ Their aversion to borrow kept long-term rates low, often lower than nominal economic-growth rates, starting in early 2003. These low long-term rates, in turn, prolonged the U.S. housing bubble by an extra two years, and planted the seed for the subprime fiasco now unfolding across global financial markets.

This pattern of GDP growth exceeding long-term interest rates was also observed in the U.S. in the years after history's most severe balance sheet recession, the Great Depression.

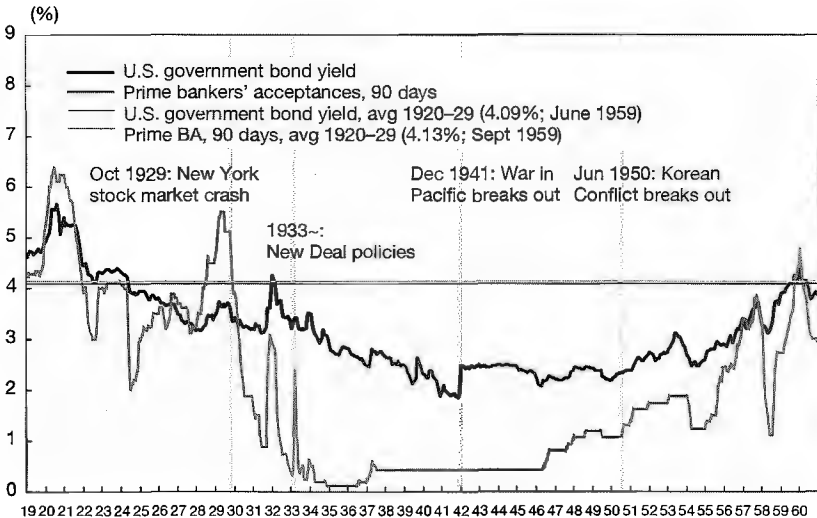
Between 1946 and 1959, for example, nominal GNP growth in the U.S. averaged 6.7 percent, while long-term interest rates averaged 2.8 percent (Exhibit 2-11). Moreover, it took thirty years, or until 1959, for long- and short-term interest rates to return to their pre-bubble 1920s average of 4.1 percent (Exhibit 2-12). When we consider that this thirty-year period spanned the New Deal, World War II, and the Korean War, all of which involved major fiscal expenditures, the low interest rates seen during this period highlight just how weak private-sector loan demand was. The point is that it takes a great deal of time for private-sector loan demand to recover

Exhibit 2-11. Nominal growth exceeded long-term interest rates as the U.S. emerged from a balance sheet recession



Source: U.S. Bureau of the Census (1975), p. 224; Board of Governors of the Federal Reserve System (1976), Vol. 1, pp. 468-471, Vol. 2, pp. 720-727.

Exhibit 2-12. U.S. interest rates needed thirty years to recover to the average level of the 1920s



Source: Board of Governors of the Federal Reserve System (1976), Vol. 1, pp. 450-451 and 468-471; Vol. 2, pp. 674-676 and 720-727.

after a balance sheet recession. Most of the Americans who went through the debt hell of the Great Depression never took out another loan.

In Japan today, we should be worried about the possibility that the recovery in tax revenue and household savings will exceed growth in private-sector loan demand, thereby acting as a brake on the economy. Recent low long-term interest rates and weak domestic demand suggest that this may already be happening.

The advantages of using the consumption tax to fund social security

It was mentioned earlier that an ageing Japan could no longer afford to put off reforms to social security spending. On this point, former Finance Minister Sadakazu Tanigaki made an interesting proposal when he ran for the LDP presidency in September 2006. He suggested that the consumption tax be transformed into a special-purpose tax dedicated solely to funding social security expenditures. This proposal was based on an idea put forth earlier

by Takeshi Noda, a lower-house Diet member and Tanigaki's election adviser.⁴ Although the proposal received little attention from the media, it offers useful ideas with regard to reform.

Japan's ageing demographic profile means that future spending on social security is likely to surge, and here reforms are urgently needed. Dedication of the consumption tax to social security expenditures would assuage public concerns about the future of the system and—to the extent that reassured consumers would spend more and save less—have a net positive impact on the economy. Transforming the consumption tax into a special-purpose tax would also promote reforms of Japan's social security system by enabling the public to see the level of services offered as being determined by the consumption-tax rate. It would represent a major improvement over the current system, with its opaque linkage between the tax burden and level of service, which only encourages irresponsible behavior. Moreover, the longer that politicians postpone necessary reforms, the larger the eventual consumption tax hike that will be required.

Another benefit of funding social security expenditures with the consumption tax would be the decoupling of both issues from the debate on fiscal consolidation. This would force those in the fiscal-consolidation camp to focus on cutting expenditures in areas other than social security. Furthermore, placing the consumption tax and social security spending in a separate account would put an end to the incessant debate about which should come first, a consumption-tax hike or spending cuts, and bring remaining fiscal-consolidation issues into better focus.

The greatest concern here is whether the consumption tax would remain a special-purpose tax. The gasoline tax, for example, was introduced decades ago to fund road construction and maintenance, but now there are moves afoot to incorporate it into the general account.

This might be understandable if Japan's roads were the envy of the world, but in reality, many roads—particularly in large urban areas—suffer from permanent congestion. If anything, Japan's roads are inferior to many of those recently built in China and other Asian nations, and the high cost of road transport weighs heavily on the global competitiveness of Japanese businesses. Moreover, China and other Asian countries continue to invest heavily in this area, causing a steady widening of the competitive gap.

If politicians continue trying to transform existing special-purpose taxes into general-purpose revenue sources, essentially taking revenues wherever they can get them, the public will begin to lose faith in the concept of special-purpose taxes, and most of the benefits for social security reform described will be lost.

The media coverage surrounding Tanigaki's proposal did little to convey its significance, and his campaign pamphlet devoted only a single line to the issue. But the idea is an excellent one and worthy of consideration, particularly in a rapidly ageing nation such as Japan.

4. Proclaiming the need for monetary easing only demonstrates a lack of understanding of the recession

Quantitative easing was the twenty-first century's greatest monetary non-event

Chapter 1 discussed the impotence of monetary policy during a balance sheet recession. For the past twenty years, however, the economics profession has been dominated by the view that monetary policy is all-powerful. The factors that led to this state of affairs will be discussed in detail in Chapter 3. For now, it suffices to say that for these academics, the notion that monetary policy was powerless to save Japan was simply unacceptable. Starting around 1999, they strongly urged the Bank of Japan to implement a policy of quantitative easing, arguing that the economy would recover if only the bank substantially increased the supply of liquidity, even though interest rates were already at zero. Politicians and the media, having grown impatient with the lack of progress on the economic front, joined the bandwagon. The Bank of Japan argued vigorously that such measures would be meaningless, but it was eventually overridden, and in March 2001 then Governor Masaru Hayami made the decision to implement quantitative easing.

The increase in liquidity that resulted is illustrated in the upper-right section of Exhibit 1-9. During the period between March 2001 and March 2006, the Bank of Japan pumped ¥25 trillion of reserves—equivalent to five times banks' required reserves—into the system. Yet, as Exhibit 1-8 shows, the money supply grew only

by an amount equal to the increase in government borrowing over private-sector debt repayment during this period. The increased availability of reserves was totally irrelevant to growth in money supply because the banking system was awash in excess reserves long before quantitative easing began.

The central bank's implementation of quantitative easing at a time of zero interest rates was similar to a shopkeeper who, unable to sell more than 100 apples a day at ¥100 each, tries stocking his shelves with 1,000 apples, and when that has no effect, adds another 1,000. As long as the price remains the same, there is no reason consumer behavior should change—sales will remain stuck about 100 even if the shopkeeper puts 3,000 apples on display. This is essentially the story of quantitative easing, which not only failed to bring about economic recovery, but also failed to stop asset prices from falling well into 2003.

Some argue that the recent recovery of the Japanese economy is proof that quantitative easing worked. For that to be true, however, events would have to unfold as follows: banks take advantage of increased liquidity to boost lending, which causes the money supply to expand, which in turn lifts GDP. In reality, GDP has risen despite sluggish growth in lending activity and the money supply. GDP is expanding now because companies that have finished repairing their balance sheets are starting to invest the cash flow that they had been using to pay down debt, and because exports are growing. Both factors are entirely unrelated to the Bank of Japan's supply of liquidity.

Even though quantitative easing failed to produce the expected results, the belief that monetary policy is always effective persists among economists in Japan and elsewhere. To these economists, quantity easing did not fail: it simply was not tried hard enough. According to this view, if boosting the excess reserves of commercial banks to ¥25 trillion has no effect, then we should try injecting ¥50 trillion, or ¥100 trillion.

At the risk of belaboring the obvious, imagine a patient in the hospital who takes a drug prescribed by her doctor, but does not react as the doctor expected, and, more importantly, does not get better. When she reports back to the doctor, he tells her to double the dosage. But this does not help, either. So he orders her to take four times, eight times, and finally a hundred times the original dosage. All to no avail. Under these circumstances, any normal

human being would come to the conclusion that the doctor's original diagnosis was wrong, and that the patient suffered from a different disease. But today's macroeconomics assumes that private-sector firms are maximizing profits at all times, meaning that given a low enough interest rate, they should be willing to borrow money to invest. With private-sector firms acting in a forward-looking manner at all times, a recession can occur only if the supply of money is disrupted at either the central-bank or commercial-bank level. In other words, all recessions are rooted in problems with the supplier or lender of money.

In reality, however, borrowers—not lenders, as argued by academic economists—were the primary bottleneck in Japan's Great Recession. If there were many willing borrowers and few able lenders, the Bank of Japan, as the ultimate supplier of funds, would indeed have to do something. But when there are no borrowers, the bank is powerless.

Anyone working in the financial sector is well aware that Japan suffers from an acute shortage of borrowers. This is why interest rates have been so low for so long. But the academics have few opportunities to observe conditions “on the ground,” and therefore have difficulty understanding the reality. Foreign economists, including those in the IMF, are even further removed from Japan's financial markets, and therefore find it impossible to believe that there are no willing borrowers. It was this ignorance of actual conditions that led the IMF to urge the Bank of Japan to continue the policy of quantitative easing.

Incidentally, this is the same IMF that forced Japan to the brink of economic collapse in 1997 by urging fiscal consolidation. There was in effect a huge gap between the Japanese economy as IMF economists imagined it and the reality. When a team of IMF representatives visited me in 1996 to discuss this issue, I told them in no uncertain terms that they must not enjoin the Japanese government to pursue fiscal consolidation, because if they did, and the government listened, the Japanese economy would almost certainly collapse. Even though the IMF team listened and took notes, they went ahead and recommended that the Japanese government proceed with fiscal consolidation. After the debacle in 1997, the same team of IMF representatives actually came back to my office and apologized for their mistake, saying “We are very sorry for the Japanese people.”⁵ I did not know until

then that the IMF actually apologizes, at least in private, for its policy mistakes.

Unfortunately, the IMF's Japan desk was subsequently replaced, and the institution seems to have reverted to the academic orthodoxy. This is not entirely surprising. The balance sheet recession concept does not appear in any economics or business textbook. Newly appointed staff, having no direct knowledge of Japan, will try to understand the situation using the tools they acquired at university. As a result, each change of the Japan desk resets the IMF's understanding of the Japanese economy to zero.

In the end, the Bank of Japan abandoned ZIRP and quantitative easing in 2006. It did so because by the second half of 2005 a real recovery had finally begun, driven by export growth and the resolution of balance-sheet problems in the corporate sector. The shift of net private-sector loan demand into positive territory (Exhibit 1-3) indicated that Japan's economy was finally returning to the world described in economics textbooks. The Bank of Japan ended quantitative easing in March 2006, and terminated ZIRP in July of the same year. Although these policy changes caused a huge stir among academics and members of the media, their impact on the real economy was negligible, which is hardly surprising given the absence of private-sector borrowers. As should be clear to readers by now, neither quantitative easing nor any other aspect of monetary policy had had any effect to begin with.

Excess reserves could be tolerated only because loan demand was nonexistent

If these monetary policies had no impact, why did the Bank of Japan insist that they be abandoned as soon as possible? They had to be abandoned because private-sector borrowers are coming back. By leaving huge quantities of liquidity sloshing around in the banking system at such a time, the Bank of Japan risked triggering a limitless credit expansion fueled by the commercial banks.

As noted, banks are required to keep a certain amount of funds in reserve against the loans they make. With a 10 percent reserve requirement, for example, a bank that receives a deposit of ¥100 must keep ¥10 on hand, but may lend out the remaining

¥90 to another customer. In other words, ¥10 of reserves is supporting ¥100 of deposits and ¥90 of loans.

More than ¥25 trillion of excess reserves was pumped into the banks under the quantitative easing policy. Banks may lend money against these reserves, but only about ¥5 trillion in reserves is actually required under the law to sustain the current money supply and loans outstanding. Consequently, the additional ¥25 trillion in reserves could potentially support a money supply six times as large as the existing one. A 500 percent increase in the money supply translates to a potential 500 percent increase in price levels. A central bank charged with keeping inflation in check cannot countenance such a scenario. So the Bank of Japan opted to end quantitative easing as soon as a rebound in private-sector loan demand was confirmed.

As long as there are no borrowers, no amount of quantitative easing will harm the economy. But if the policy is continued after borrowers return to the market, it can lead to dangerously high money-supply growth and inflation. This is why the Bank of Japan rushed to mop up the excess liquidity, and effect a return to more normal conditions as soon as it saw the number of borrowers growing. This is the natural response of a healthy central bank.

Ending quantitative easing was not equivalent to ordinary tightening

Under quantitative easing, the Bank of Japan supplied liquidity to the market. It did so by purchasing government bonds held by commercial banks, and crediting money to their current accounts. This process was repeated until the aggregate value of banks' current accounts had risen to more than ¥30 trillion. To terminate the policy, this process had to be reversed. In theory, this would involve the bank selling government bonds to commercial banks to absorb the excess funds in their current accounts.

Selling government bonds should cause their price to fall, driving up interest rates. In practice, however, abandoning quantitative easing was not a "tightening" of monetary policy in the ordinary sense. In a standard tightening phase, the Bank of Japan responds to an overheated economy by selling bonds to commercial banks to mop up market liquidity and reduce the volume of money circulating. Commercial banks, on the other

hand, normally try to maximize income on available funds by reducing liquidity on hand to the statutory minimum or thereabouts, and lend or invest the rest of their funds. Under these circumstances, commercial banks would not have the surplus funds needed to buy bonds from the Bank of Japan—their only option would be to sell other assets. In some cases, they might even consider calling in loans. So when the Bank of Japan starts selling bonds to commercial banks, banks are prompted to sell other financial instruments, driving down the price of financial assets in general (and thereby pushing up interest rates). This chain reaction of selling has a restrictive impact, and serves to cool economic activity:

But in terminating quantitative easing, the ¥25 trillion in surplus funds that the Bank of Japan sought to mop up was already sitting in commercial banks' current accounts with the central bank, which pays no interest. Facing an absence of private-sector borrowers, the commercial banks could do nothing else with these funds. So when the Bank of Japan asked the banks to buy ¥25 trillion of government bonds, they paid for the purchases with money already on deposit with the Bank of Japan.

Because the banks did not need to raise funds elsewhere, the operation had none of the negative impact of a normal tightening operation, and interest rates did not rise significantly. Quantitative easing—the great non-event of the fifteen-year recession—vanished without a trace.

Tightening does affect the financial markets

In July 2006, the Bank of Japan ended ZIRP, and raised short-term interest rates to 0.25 percent. It lifted the policy rate again in February 2007 to 0.5 percent. These rate hikes are also likely to have a negligible impact on the real economy, because private-sector loan demand, while stronger than it was, remains weak.

A higher policy rate affects the economy primarily through two channels: those who have borrowed money, and those who are planning to borrow money. With few in either category at present, the impact of the rate rise is almost certain to be muted.

For the financial markets, on the other hand, the end of ZIRP had major implications. A world with a zero interest rate is markedly different from one with a very low (but still positive) rate.

The difference is similar to that between an ordinary restaurant and an all-you-can-eat buffet. When the marginal cost of food is zero, people tend to eat too much. But when the marginal cost is positive, no matter how small, there is relatively little risk of overeating. The same holds true in the world of finance. When money is free, risk management tends to become lax, and managers allocate money to investments that under ordinary circumstances would be unacceptable. Once there is a clear marginal cost to borrowing, however, they avoid these investments, and the flow of funds normalizes.

Credit spreads in the corporate-bond market widened in the wake of the July 2006 rate hike. Credit spreads are simply the difference in yield between bonds of differing credit quality. For example, if a “AAA”-rated corporate bond carries a yield of 2.5 percent and a “AA”-rated bond pays 3.0 percent, the spread between the two is 0.5 percent. Credit spreads fell to abnormally low levels under ZIRP, which implies that the zero cost of funding produced fairly loose lending standards. Spreads widened as soon as the Bank of Japan raised the policy rate in July 2006, and the market began to demand returns commensurate to the risk involved.

Clearly, the rate hikes that began in July 2006 had a greater impact on credit spreads and other aspects of the financial markets than on the real economy. But these adjustments are an inevitable part of the normalization process. The only problem is that because interest rates were so low for so long, many market participants—particularly the younger ones—have never experienced a period of rising interest rates. Some of them have not even considered the possibility. This is a potential source of market turmoil, which is likely to figure into the Bank of Japan’s calculations as it moves ahead with interest-rate normalization.

Localized land-price appreciation under general price stability

One of the problems the Bank of Japan faced recently is that real-estate prices have risen substantially in certain parts of the country despite continued weakness in overall prices. Times during which certain asset prices move in a different direction to prices in general can be extremely difficult for a central bank to

navigate, a fact highlighted during the Heisei bubble of the late 1980s. Then, asset prices were skyrocketing, while wholesale prices were falling due to massive currency appreciation after the Plaza Accord of September 22, 1985. The correct policy response in such situations is to tailor interest-rate policy to general price trends, while dispatching government bank inspectors to urge individual banks to make sure that prudent loan-to-value ratios are maintained and that the banks do not become too deeply involved in frothy sectors. They might, for example, admonish banks not to lend too heavily against a certain type of real estate in Tokyo. Stern warnings may sometimes be necessary.

In short, the idea is to ensure that macro-level interest-rate policy follows price levels in the broader economy, while localized speculation is dealt with case by case by bank inspectors. The Bank of Japan has been implementing this kind of policy since 2005. Only when this is no longer sufficient to stop the flood of speculation should interest rate policy be mobilized.

If this is the right policy, why did the Heisei bubble occur? The Bank of Japan in the late 1980s did send out inspectors to warn bank managers about the problems unfolding, but to little effect. Lenders rejected the central bank's warning, and demanded to know why they should not make loans against land, an asset that had not fallen in value in forty years. The Bank of Japan inspectors had difficulty making their case given this undeniable track record. Some inspectors may have responded by saying that forty years of rising land prices were no guarantee that prices would also rise in the forty-first year. But this argument would hardly have been persuasive in the heady atmosphere of the time. Lenders kept lending against land that kept appreciating, and eventually the situation spiraled out of control.

Today, however, the Bank of Japan's voice carries the weight of past experience. The bitter experience of the 1980s is likely to lead its bank inspectors to act preemptively. And lenders, having just spent more than a decade disposing of bad loans, are unlikely to cast a deaf ear to the warnings of the Bank of Japan once again.

Were Koizumi's reforms good for Japan?

Some are saying that the departure of the Koizumi administration, with its overriding focus on structural reforms, will slow the

reforms, thereby postponing the economy's recovery. Some also worry that reform standard bearer Heizo Takenaka's retirement from politics may cause the government to backslide in this area.

But it is highly doubtful whether Koizumi and Takenaka are to be thanked for the current recovery. If, as both argued, the banking sector was the main bottleneck in the economy, then lending should have grown, and the money supply should have expanded as banks worked through their bad loans, leading the economy to recovery.

In reality, the economy rallied despite tepid growth in both lending and the money supply, suggesting that the real cause of the rebound lay elsewhere. The primary cause of the recovery is that businesses finally cleaned up their balance sheets. Another is that exports—particularly to China and southeast Asian markets—have risen sharply.

Soon after being appointed financial services minister in September 2002, Takenaka unleashed the "Takenaka shock" in a bid to reform the banking sector. At the time, however, the corporate sector was in the midst of repairing its balance sheets, and the nation's businesses, far from seeking to borrow, were actually trimming debt by ¥30 trillion a year. With private-sector loan demand actually negative, there was no need whatsoever to rush ahead with banking reforms. The so-called Takenaka shock and the consequent nationwide drop in asset prices, including shares, served only to prolong the cleanup of the debt-ridden corporate balance sheets that was the primary cause of the recession.

Nor was there any need to push ahead with privatization of the post office at a time when the private sector had no need for funds and the public sector was the economy's sole borrower. Japan's economy and money supply were both being propped up by government borrowing and spending. What is needed in these circumstances is for the government to absorb the excess savings of the private sector at as low a cost as possible, thereby minimizing the cost of the economic stimulus measures that taxpayers will eventually bear. And it was the post office that had been playing this role. Therefore, the government should have delayed the postal reforms until corporate balance sheets had fully recovered and private sector businesses were borrowing again. It would not have been too late.

In summary, the Japanese economy recovered in spite of and not because of Takenaka's efforts. Indeed, many of his policies—

such as his decision to make an example of banks' deferred tax assets without understanding the differences between the U.S. and Japanese tax codes on nonperforming loans, which resulted in massive turmoil and confusion—actually had a tremendous negative impact on the economy.⁶

Lessons from the history of structural reform

On the broader topic of structural reforms, both the Japanese and foreign media have argued that a pause in reform would reduce the nation's appeal for foreign investors, triggering a sell-off of Japanese equities. But a lot depends on the exact nature of the reform under consideration. Structural reform became the focus of attention in 1997, for example, as Prime Minister Hashimoto announced his "Six Major Reforms," which included the aforementioned fiscal consolidation. Japanese and foreign media soon jumped on the bandwagon, and praised the move. In the end though, foreign investors voted with their feet, sparking a huge sell-off of Japanese stocks, starting in early 1997.

I was on a business trip to London when Prime Minister Hashimoto announced his fiscal-consolidation measures in January 1997, and the general view among U.K. investors in Japanese equity went something like this: "The Japanese economy is being kept afloat by government spending. Now that the government has announced plans to rein in spending as part of structural reforms, it is clear as day that the economy will suffer. So why are you telling me to buy Japanese stocks?" The resultant exodus of investment funds from Japan was so large that a new phrase, "*Nihon uri*" ("dump Japan"), was coined to describe it. And just as these investors predicted, the April 1997 hike in the consumption tax triggered a meltdown, in which the economy shrank for five consecutive quarters. Reforms alone will not persuade investors, whether foreign or domestic, to buy Japanese equities. The key issue from their point of view is whether the economy is on a stable growth path.⁷

Journalists, meanwhile, are a very different breed. Many want to push for structural reform to change the old economic structure. By setting out an ideal vision for the Japanese economy, they can bask in a sense of superiority and omniscience. This tendency to play God and dictate the "right set" of structural reforms for

governments to implement seems particularly strong among journalists based in the U.S. and U.K. But fund managers investing their own money have no time for such self-aggrandizement; they must constantly make prudent buy-or-sell decisions based on market realities. Consequently, they are not interested in investing in a country shaken to its foundations by unrealistic structural reforms.

ENDNOTES

1. The previous loss carry-forward period of five years was extended to seven years in the 2004 tax-code revisions, retroactively applied to any fiscal year starting on or after April 1, 2001.
2. Ministry of Finance (2003).
3. Bloomberg (2004).
4. For details, see Noda (2004).
5. Koo (2001a), p. 78.
6. For details of this unfortunate fiasco, see Koo (2003a), pp. 174–8.
7. For details, *ibid.*, pp. 152–60.

The Great Depression was a Balance Sheet Recession

1. Why have economists overlooked balance sheet recessions?

Corporate debt minimization: the long-overlooked possibility

Now we are ready to venture into the tiger's lair in search of the Holy Grail. All the academic papers on Japan and on the Great Depression mentioned at the beginning of Chapter 1 are based on one implicit assumption. They assume that the nature of the external shock that dislodged these economies from their normal growth path is not particularly important, and, consequently, that the priorities of the economic agents involved did not change in spite of the external shock.

The balance sheet recession concept, however, starts with the notion that certain external shocks actually change the priorities of firms and households. In particular, a nationwide fall in asset prices forces firms to shift their priorities from profit maximization to debt minimization to repair their balance sheets. That, in turn, produces a very different economic outcome than ordinary recessions. This Chapter argues that both deflation and the liquidity trap observed in the U.S. during the Great Depression were caused by such a shift in corporate priorities following the

1929 collapse in share prices. Chapters 4 and 5 then go on to show that corporate debt minimization, together with its direct impact on both aggregate demand and the money supply, is the long-overlooked key that is essential to integrating the diverse ideas developed in macroeconomics since the late 1930s.

Conventional economics and business textbooks have seldom considered the possibility that a large number of businesses might seek to minimize debt, rather than maximize profit. Even Keynes (1936), who broke away from the framework of neoclassical economics when he proposed the concept of aggregate demand, tried to explain changes in business behavior as shifts in the marginal efficiency of capital. But for his argument to function, he had to assume that firms are maximizing profits. In the end, Keynes could not break away from the neoclassical mindset that firms always seek to maximize profit.¹ Irving Fisher (1933), in a celebrated paper on debt deflation published in *Econometrica*, spent a great deal of time discussing the phenomenon of over-indebted companies paying down debt. However, he failed to consider the direct role debt repayment plays in reducing aggregate demand. Instead, he relied on corporate fire sales to produce severe deflation, which he argued will continuously increase the real (inflation adjusted) value of debt. He does not consider companies paying down debt in an environment of zero inflation and a zero interest rate. The differences between the balance sheet recession concept and Fisher's debt deflation are discussed in greater depth in the coda to Chapter 5.

Ben Bernanke (1983) touched upon balance-sheet concerns when he proposed what he called the "financial accelerator" theory, according to which a fall in asset prices during a recession hampers banks' ability to determine the actual state of corporate balance sheets. This makes banks less willing to lend, and aggravates the downturn. But the theory focuses on lenders, not borrowers.

The liquidity trap as a borrower's phenomenon

In a balance sheet recession, firms respond to a plunge in asset prices by trying to minimize debt rather than maximize profits. This changes how the economy responds to the standard tools of fiscal and monetary policy. In particular, without private-sector

borrowers, the effectiveness of monetary policy is drastically reduced. More precisely, with no private-sector borrowers, interest rates lose their traditional role of channeling private-sector savings into investment, thereby keeping the income stream flowing. After all, overly indebted firms are not interested in increasing borrowings no matter how far interest rates fall.

This conclusion is in sharp contrast to the standing consensus among academic economists that monetary policy is more useful than fiscal policy as a tool for dealing with economic fluctuations. This consensus is based on both empirical evidence of the post-1945 world and the theoretical understanding of policy-transmission channels. Regarding the former, most of the leading nations adopted an active, Keynesian approach to fiscal policy from the 1940s through the 1970s to fine-tune their economies. This global experiment began in the late 1940s, as economists who had witnessed the overwhelming power of fiscal stimulus in the period between the Great Depression and the end of World War II believed that *any* recession could be averted by the proper administration of fiscal policy.

But in the end, despite the best efforts of academic economists and policymakers, these policies resulted only in inflation, higher interest rates, crowding out of private-sector investment, and a misallocation of resources. The resultant inflationary environment of the 1970s, coupled with the two oil shocks, prompted economists to reaffirm the importance of monetary policy. In the U.S. and the U.K., supply-side reforms aimed at achieving a smaller, less intrusive government helped to encourage the shift away from fiscal policy, which by its nature requires a large government. In addition, the need to analyze the behavior and expectations of individual economic agents in an inflationary environment prompted a return to the neoclassical analytical framework.

The renewed interest in monetary policy and the poor record of fiscal policy from 1945 to the late 1970s have also prompted numerous academic re-examinations of the Great Depression over the past twenty years. In light of the poor performance of fiscal policy from 1945 to 1970, it was felt that perhaps too much credit had been given to the role of fiscal stimulus in pulling the U.S. out of the Great Depression. After all, it was the Great Depression that had prompted the economics profession's wholesale shift to Keynesian fiscal policy.

As a result of this re-examination, many economists concluded that the Great Depression of the 1930s could have been avoided through the proper administration of monetary policy, especially if it had been applied early on. Furthermore, and in sharp contrast to what was taught in schools from the 1940s to the 1970s, mainstream economists now believe that it was monetary policy that made possible the recovery from the Great Depression, and that the fiscal stimulus contained in the New Deal policies of President Roosevelt was largely irrelevant.

In a balance sheet recession, however, firms seek to reduce their debt to presentable levels as quickly as possible, before journalists or outside analysts discover that their balance sheets are actually underwater. The last thing on their minds is borrowing more money. As a result, they cease to respond to rate cuts or other standard monetary signals. They also stop reinvesting earnings in the business, and they no longer borrow household-sector savings. These behavioral changes reduce aggregate demand and weaken the economy.

When a contraction of aggregate demand sends the economy into a tailspin, the central bank's natural response is to ease monetary policy by lowering interest rates. In this type of recession, however, the economy fails to respond because the corporate sector is in debt-minimization mode. When continued monetary accommodation fails to turn the economy around, the central bank panics, dropping interest rates to near-zero levels. Still nothing happens, and the economy falls into what economists call a liquidity trap.

The economics literature describes a liquidity trap as a situation in which interest rates have fallen to such low levels that money—cash—and bonds become perfect substitutes. At that point, suppliers of funds choose to hold cash instead of lending the funds at such low rates to the corporate sector by buying bonds. Because these funds are no longer available for investment, any further lowering of interest rates will fail to stimulate investment or the economy. In traditional economic theory, this preference for cash when interest rates are very low is explained as “speculative demand for money” or as a “liquidity preference.” In other words, the liquidity trap is attributed to behavioral change on the part of *lenders* in response to extremely low interest rates. Believing that Japan had fallen into this type of liquidity trap, Svensson (2003), for example, began a paper by asking how the Japanese central

bank should supply funds to prevent the substitution of money (cash) for bonds.

The problem with this lender-centered viewpoint is that it does not provide a convincing explanation of why the economy does not respond while interest rates are being brought down to such a low level. After all, Japanese short-term interest rates fell nearly 800 basis points from 1991 to 1995 with no visible economic impact. There is also the question why the Japanese economy and asset prices, which responded strongly to low interest rates in the late 1980s, showed no reaction when faced with the same low interest rates only a few years later.

Once the liquidity trap is viewed as a result of behavioral change on the part of *borrowers*, however, the facts begin to make sense. The key difference between the pre- and post-bubble Japanese economy is the health of corporate balance sheets. Before the bubble, Japanese companies enjoyed strong balance sheets, with credit ratings that were the envy of the world. Corporate leaders had their eyes on the future, and responded well to interest-rate signals from the central bank. After the bubble burst, however, severely impaired balance sheets and plummeting credit ratings forced them to become defensive and backward looking, and they began to give first priority to debt reduction. In this environment, no amount of monetary easing by the central bank will persuade businesses to increase borrowing. The real cause of the liquidity trap, therefore, is a change in the behavior of borrowers, not lenders.

As firms strive to minimize debt, not only do they earmark cash flow for paying down debt, but they stop borrowing and investing the savings of the household sector. This creates a huge deflationary gap. As the real economy begins to weaken, the central bank lowers interest rates. But the economy fails to respond because firms with debt overhangs are no longer interested in increasing investment. The central bank then panics and drops rates as low as possible. Even this is insufficient to provoke a response, which prompts the media to report that the economy is in a liquidity trap. But the trap actually began *the moment* that companies started minimizing debt.

We can now see that a liquidity trap has nothing to do with the level of interest rates. Instead, the trap is created the moment firms shift their focus from maximizing profits to minimizing debt. Moreover, this change in corporate behavior can happen

at any interest rate. When Japanese companies began shifting their priorities to debt minimization around 1993, for example, short-term interest rates were still above 3 percent, and long-term rates were above 4 percent, leaving the central bank plenty of room to lower rates. Nevertheless, monetary policy had begun to lose its effectiveness, because many firms had already begun trimming their debt loads, and corporate borrowing fell steeply. This explains why nothing happened during the four years when Japanese interest rates were brought down from 8 percent to 0.5 percent.

The Bank of Japan's aggressive implementation of quantitative easing starting from 2001 brought short-term interest rates down to zero, and sent the yield on ten-year government debt to 0.4 percent in 2003, the lowest rate ever recorded. Yet no shift of funds from bonds to money—as predicted by the speculative demand for money or liquidity-preference theories—was observed. This example demonstrates that liquidity traps have nothing to do with either speculative demand for money or the complete substitutability of bonds and money. The liquidity trap was entirely the result of a change in behavior among borrowers, not lenders.² This discovery implies that all the liquidity-trap explanations found in conventional economics textbooks are wrong.

The demise of independent monetary policy

Monetary policy effectiveness is based on certain stable relationships between monetary aggregates. Once corporate borrowers enter debt-minimization mode, however, these relationships break down, as noted in Exhibit 1-9. In an economy in which everyone is drawing down bank deposits to liquidate debt, the money multiplier will turn negative at the margin, because a decline in deposits means a decline in the money supply. As noted in Exhibit 1-8, Japan's money supply would have contracted had it not been for an increase in government borrowing to offset private-sector debt repayment.

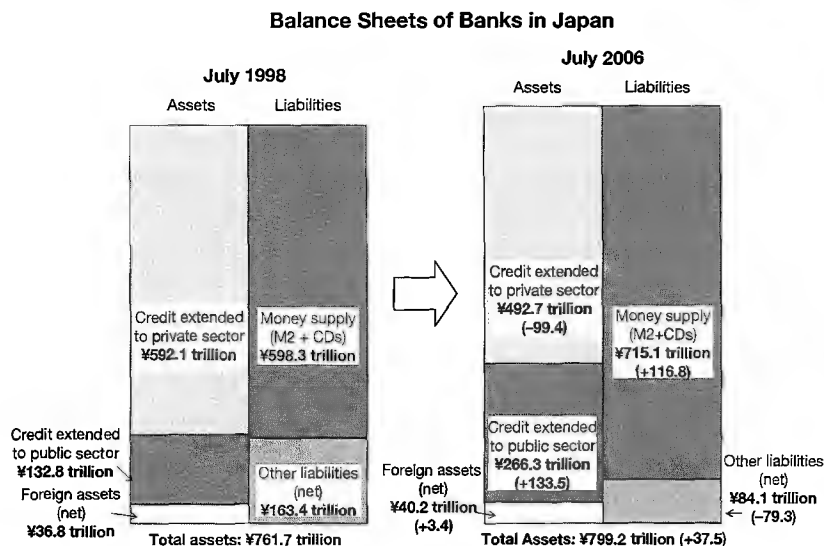
The same conclusion is illustrated by Exhibit 3-1, which compares the banking sector's balance sheet in July 1998 and July 2006. The money supply, represented by deposits, is a liability for the banking sector. For it to increase, bank assets must also increase. A look at bank assets at these two points shows that the

increase in lending to the government prevented a contraction in the money supply, even though credit to the private sector shrank. When the private sector is focused on paying down debt, only public-sector borrowing and spending can prevent a contraction in economic activity and the money supply.

Exhibit 1-9 indicated that the money supply could have shrunk by 37 percent if the government had not stepped up borrowing and spending. Exhibit 3-1 arrives at a similar conclusion by showing that if the government had not run an expansionary fiscal policy, leaving the money supply to be determined solely by the private sector, Japan's money supply would have fallen by some ¥100 trillion between July 1998 and July 2006. When the cumulative deflationary impact of such shrinkage is added in, the money supply would have shrunk by far more than ¥100 trillion.

In short, independent monetary policy ceases to exist when there is no demand for funds from the private sector and the

Exhibit 3-1. Japanese bank balance sheets



Note: (M2 + CDs) is the sum of cash, checking and savings deposits, time deposits, and CDs. Credit extended to private sector comprises private-sector lending, corporate bonds, and equities. Credit extended to public sector is central and local government bonds. Japanese banks consists of the Bank of Japan, domestic commercial banks, Japanese branches of foreign banks, *shinkin banks*, Norinchukin Bank, Shokochukin Bank, and Shinkin Central Bank.

Source: Bank of Japan, *Monetary Survey*.

economy is in a balance sheet recession. Because the government is the only borrower left in this economy, the money supply can grow if fiscal policy is expansionary, but will shrink if it is contractionary, regardless how much liquidity the central bank injects. When firms are striving to minimize debt, therefore, fiscal policy must be mobilized to prevent a contraction of the money supply.

Crowding out of private sector investment by the government, the biggest drawback of fiscal policy, cannot occur under such circumstances because the private sector is busy paying down debt. Nor does heavy public-sector spending lead to inefficient resource allocation, because any resources the government is not using would otherwise be left unused or unemployed, which is the worst form of resource allocation.

The mechanism of a deflationary spiral

The conventional notion in economics that businesses are always maximizing profits assumes implicitly that these firms all have reasonably healthy balance sheets. Profit maximization assumes that for corporates:

$$\text{Assets} - \text{liabilities} > 0 \quad (1)$$

In the real world, however, this implicit assumption is often violated after the collapse of a nationwide asset-price bubble. In these cases, when the corporate balance sheet shows:

$$\text{Assets} - \text{liabilities} < 0 \quad (2)$$

management's priority will be to minimize debt. Once this shift in priorities occurs, there is no longer anyone to borrow household savings and the net debt repayment of the corporate sector. As a result, the economy loses demand equivalent to the sum of household savings and net corporate debt repayment each year. The continued decline in aggregate demand then pushes the economy into a deflationary spiral.

If left unchecked, this contractionary process will continue until the private sector becomes too poor to save any money. As income falls from ¥1,000 to ¥900 to ¥810 to ¥729 in the example

given in Chapter 1, the economy will eventually reach a point at which the private sector becomes so poor that it can no longer save. If this point turns out to be ¥500, all ¥500 of income will be spent, nothing will be saved, and the economy will finally reach a contractionary equilibrium, or what is typically referred to as a depression.

The descent of a national economy into a deflationary spiral can be expressed as

$$GDP_t = GDP_{t-1} (1 - S - R)^t \quad (3)$$

where GDP_{t-1} is the initial or bubble-peak GDP, S is household savings, and R is net debt repayment by the corporate sector, with both S and R expressed as a percentage of GDP. In ordinary economics literature, R will be expressed as a negative value of I , which stands for investment. The expression R is used here, however, to emphasize that this is debt repayment. The example given in Chapter 1, in which the economy is shrinking from ¥1000 to ¥900 to ¥810, can be obtained from equation (3) by setting GDP_{t-1} to ¥1000, R to 0, and S to 0.1.

In an ordinary world, where firms are maximizing profits, R will be replaced by a positive and interest sensitive I , and the financial sector will make sure that all the S generated by the household sector is borrowed and invested by the corporate sector through the adjustment of interest rates. That function of the financial sector prevents the economy from falling into the deflationary spiral of equation (3). When firms are minimizing debt, however, R is no longer interest sensitive, and the role of interest rates to equate savings and investment is no longer functional.

In reality, both S and R are likely to change over time. When the economy has reached a contractionary equilibrium, for example, households are too poor to save any money ($S = 0$), and firms have no cash flow to pay down debt ($R = 0$). At that point, the contraction will stop, and the economy will stabilize, albeit at a very low level of activity.

Because S and R are likely to change, and the government and external sectors also play a key role in this type of recession, a more accurate depiction of the deflationary spiral is given by:

$$GDP_t = GDP_{t-1} \Pi (1 - S_t - R_t + G_t + EX_t) \quad (4)$$

where G is government spending (net of tax revenue) and EX is net exports, both expressed as a percentage of GDP. Equation (4) shows that when the external sector is balanced (i.e. $EX = 0$), government borrowing and spending G must be large enough to offset S and R to stabilize the economy. This is what Governor Fukui was trying to explain to Professor Honma in the exchange reproduced in Exhibit 2-7.

As with nationwide asset-price bubbles, balance sheet recessions happen only rarely. But when they do, they render standard economic policy prescriptions powerless or worse. This means that certain key aspects of established economic theory must be altered to take such occasions into account. In particular, Adam Smith's invisible hand works in the opposite direction during a balance sheet recession, pushing the economy ever closer to a contractionary equilibrium.

In 1990, at the height of the Heisei bubble, the corporate sector was borrowing and spending 9 percent of GDP, or about ¥41 trillion (Exhibit 1-6a). But by 1998, firms had become net savers, and in 2003, their net debt repayments amounted to some 9 percent of GDP, or ¥44 trillion. Therefore, the total swing during this period was ¥85 trillion, or 18 percent of GDP. A loss of aggregate demand equal to 18 percent of GDP will send any economy into recession, if not outright depression.

Even if firms are minimizing debt, however, executives have no incentive to volunteer this information, particularly if their net worth is in or near negative territory. The same holds true for the bankers who have lent money to these businesses. Moreover, the apparent failure of standard monetary and fiscal policy to revive the economy causes members of the general public, including many economists, to conclude that the problem must be structural in nature. This misguided conclusion has prompted a great deal of fruitless policy debate in Japan and Germany over the past few years.

But now the Japanese and German economies are recovering. Given enough time, firms generating positive cash flow will eventually repair their balance sheets, and revert to the textbook profit-maximizing mode. It is simply a matter of time, not of structure. In the meantime, they will keep a low profile, and try not to attract attention to their balance sheets while paying down debt as quickly and as quietly as possible. This is basically what

has been happening in Japan since the asset-price bubble burst in 1990 and at so many companies around the world since the IT bubble collapsed in 2000.

2. The Great Depression as a balance sheet recession

Findings of recent research on the Great Depression

With the true cause of the liquidity trap and deflationary spirals now understood, we are ready to discuss their applicability to the Great Depression. That independent monetary policy ceases to exist, and that even the size of the money supply comes to depend on fiscal policy during a balance sheet recession contradict the economics profession's research on the Great Depression over the past twenty years. This research has led economists to the view that monetary policy is eminently powerful. The huge gap between the two positions can be bridged only if it can be proven either that monetary policy was actually effective in Japan over the past fifteen years, or that the Great Depression was also a balance sheet recession. We already know the answer to the first question—after all, we showed that the size of the money supply was determined by the amount of government borrowing. The challenge, therefore, is to answer the second question in our favor. If we can prove that the Great Depression was a balance sheet recession, then we must conclude that monetary policy would have been impotent to correct it.

Some readers may wonder why a discussion of economic challenges in the twenty-first century requires a detour to an event that happened seventy years ago. We have to go back because, first, it was the Great Depression that led to the creation of macroeconomics as a separate discipline. Second, many of the monetary policy prescriptions made by academic economists in Japan and elsewhere—including inflation targets and quantitative easing—rely heavily on recent research in this field. As noted, this research has led to a growing consensus that the Great Depression could have been avoided with more skillful administration of monetary policy by the Federal Reserve. Moreover, as a test of their theory, many academics argued that their recommendations

should be tried in 1990s Japan, which had fallen into the same liquidity trap as the U.S. had in the 1930s. If monetary policy succeeded in reviving the Japanese economy, then it would be safe to conclude that it would have worked during the Great Depression as well. Therefore, they gathered round the Bank of Japan, and demanded further monetary accommodation. In light of their demands, it is necessary to re-examine the events of the Great Depression and their current academic interpretation from the perspective that the Great Depression was also a balance sheet recession.

The current academic consensus holds that the stock market plunge of October 1929 sparked a recession, which then grew into the Great Depression because the Fed failed to supply enough liquidity to the banking system. Researchers concluded that both the Depression and the banking panic could have been avoided if only the Fed had supplied enough liquidity. Current Fed Chairman Bernanke (2002b), who is also well known for his academic research on the Great Depression, acknowledged in a message read at the ninetieth birthday party of Milton Friedman—the first to attribute the Depression to the Fed's mistakes—that the U.S. central bank was indeed to blame.

The theoretical toolkit of conventional economics however, never contained the concept of a balance sheet recession, in which firms seek to minimize debt. Consequently, nearly all research on the Great Depression has proceeded from the assumption that the problem was with the suppliers or lenders of funds. Bernanke (2000), for example, clearly states that it was the financial shock caused by the Fed's failure to inject enough liquidity that aggravated problems in the real economy, and not the other way around.³ But if we start from the premise that a change in *borrower* behavior was responsible for the Great Depression, we arrive at a very different conclusion.

Banking crisis alone cannot explain decline in deposits

Chapter 1 noted that Japan's money supply could have contracted by more than 37 percent had it not been for the government's extensive fiscal stimulus. Some readers may also recall that between 1929 and 1933, the U.S. money supply shrank by 33

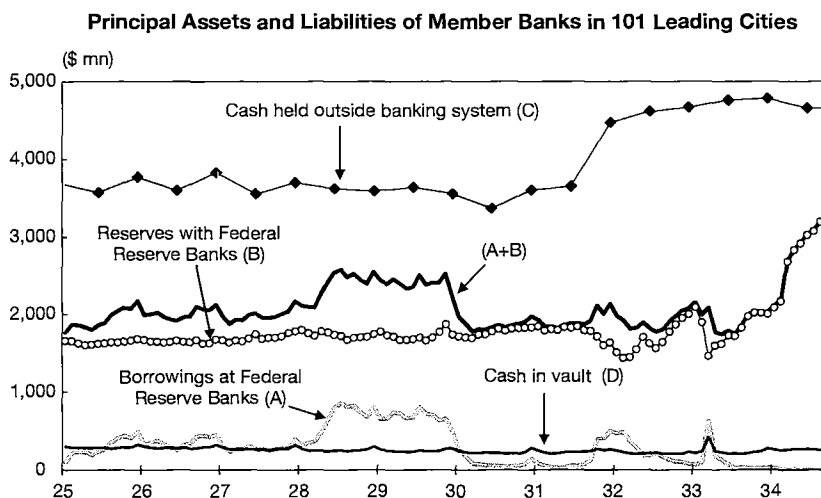
percent. Therefore, the behavior of monetary aggregates in Japan over the past fifteen years and the U.S. seventy years ago are eerily similar.⁴

What caused the U.S. money supply to shrink by 33 percent? Bank deposits, the key component of the money supply, fell by 30 percent, or \$17.7 billion, in the first four years of the Great Depression.⁵ Friedman and Schwartz (1963) attribute this contraction to the bank runs and bank failures that wiped out the savings of so many Americans. This argument has become the standard explanation for the phenomenon, which is not surprising in view of nearly 10,000 banks closing their doors during this four-year period.⁶

The implication here is that if only the Fed had injected more reserves, the banking crisis, the resulting decline in the money supply, and by inference the Great Depression itself could have been avoided. The chief problem, in other words, was that the Fed did not do enough to boost reserves in the U.S. financial system, particularly between 1929 and 1931. But a closer look at the data from the perspective of balance sheet recession theory produces a very different explanation for why the U.S. money supply collapsed.

To begin with, the Board of Governors of the Federal Reserve System (1976) estimated that depositors actually lost only \$1.4 billion in deposits because of bank closures during the Depression.⁷ In addition, while money hoarding is thought to have increased along with concerns about the banks, cash held outside the banking system rose by just \$1.2 billion between December 1929 and December 1933⁸ (Line C in Exhibit 3-2). Together, these two sums—totaling \$2.7 billion—explain just 15 percent of the \$17.7 billion decline in deposits during this period. The remaining 85 percent must therefore be due to causes other than bank failures and hoarding.

Of course, if the increase in money held outside the banking system produced an equal decline in bank reserves, the money multiplier, operating in reverse, would cause both bank lending and deposits to shrink by a multiple of the \$1.2 billion mentioned. The data indicate that banks' own reserves indeed fell by \$400 million in the second half of 1931 (line B in Exhibit 3-2), when the most destructive series of bank runs in U.S. history took place, and the decline in deposits and the growth in cash held outside

Exhibit 3-2. Borrowing at Federal Reserve banks fell from 1929 onward

Source: Board of Governors of the Federal Reserve System (1976) Vol.1, p.18, pp.138-47.

the banking system were most pronounced. However, commercial-bank borrowings from Federal Reserve banks (line A) also rose by \$500 million in the second half of 1931. Consequently, total reserves (line A + B) did not decline. Vault cash (line D) also remained constant. So while bank runs in the second half of 1931 prompted \$970 million of the aforementioned \$1.2 billion in cash to leave the banking system, total bank reserves (i.e. including borrowings from the Fed), did not decline. In other words, there was no reason for the money multiplier to work in reverse or the money supply to decline, because the Fed promptly offset the outflow of reserves from the banking system. Although some seem to think that borrowings from the Fed is somehow less desirable for a bank than having its own reserves, these borrowings from the Fed were substantially larger during the boom times of 1928 to 1929 than during the second half of 1931. During the boom period, nearly one-third of total bank reserves (A + B) was made up of borrowings from the central bank.

The Fed also increased currency in circulation from \$4.5 billion in October 1929 when the stock market crashed, to \$6 billion in March 1933 when the nationwide bank holiday was announced, with most of the increases happening during the second half of 1931 and the first few months of 1933, when the pressure on the

banking system was most acute. Even though isolated cases of bank runs triggering money multiplier to operate in reverse cannot be denied, the Fed did try to offset reserve drains by supplying cash and reserves to the banks.

“Credit crunch” alone unable to explain decline in bank lending

During the same period, from 1929 to 1933, bank lending to the private sector plunged by 47 percent, or \$19.8 billion.⁹ The established explanation is that lending fell because banks panicked in response to diminishing reserves, and forcibly called in loans. But as we have seen, bank reserves did not actually decrease when borrowings from the Fed are taken into account.

Moreover, according to a survey of 3,438 manufacturers conducted in 1932 by the National Industrial Conference Board on behalf of the federal government, only 466 firms, or 13.6 percent of the total, reported difficulties in their dealings with banks, and most of these were small-and-medium-sized companies. The remaining 86.4 percent either did not need to borrow (1,322 firms) or had no problem doing so (1,650 firms). These findings were at such odds with the picture of a credit crunch being painted by the press that the report’s compilers were unable to conceal their surprise at the time.¹⁰

That only 13.6 percent of the companies surveyed reported problems in their dealings with banks, and that nearly all of these were small businesses, suggest that companies experiencing borrowing difficulties represented just a few percent of banks’ outstanding loans even in 1932. Needless to say, this small group could not have been responsible for a 47 percent plunge in aggregate loans outstanding.

We have now determined that bank closures and cash hoarding by the public can explain only 15 percent of the decline in outstanding deposits, and that banks’ unwillingness to lend (i.e. a credit crunch) was responsible for at most 13.6 percent of the drop in loans outstanding. In other words, 85 percent of the decline in bank deposits had nothing to do with bank closures or cash hoarding, and a similar percentage of the decline in bank lending had nothing to do with bank failures or credit crunch.

What, then, could have caused the remaining 85 percent of the shrinkage in deposits and loans? There is only one possible answer to this question: firms were reducing their debt *voluntarily*. Businesses were aggressively reducing debt because the price of assets purchased with borrowed funds collapsed after the stock market crash, and their leverage was already extremely high even before the crash. In other words, they faced the same balance-sheet problems as Japanese firms in the 1990s.

As long as borrowers were paying down debt faster than lenders were calling in loans, companies would not have had any problems with their banks. This is consistent with the findings of the survey by the National Industrial Conference Board mentioned. Furthermore, because businesses repay loans by drawing down deposits, this explanation is consistent with the sharp decline in bank deposits observed during this period.

This rush to pay down debt is not at all surprising in view of the fact that, as Persons (1930) noted, both firms and households had dramatically increased their borrowing to record levels before the stock market crash in 1929. The unprecedented increase in debt was made possible largely by new financial innovations during the 1920s. One of these was monthly installment payments, which made credit available to millions who had never enjoyed such access before. As a result, borrowings by ordinary consumers more than tripled during an eight-year period in the 1920s, rising from \$2.5 billion to \$8.0 billion.¹¹ Firms that benefited from this surge in consumption massively expanded production capacity. In the radio industry, for example, production capacity tripled in 1929 alone.¹² Much of the necessary investment was funded by debt. The now-infamous investment trusts and holding companies of the time were also highly leveraged entities.¹³

Companies that borrowed heavily for expansion saw debt rise sharply relative to their capital. But as long as times were good, higher leverage meant higher return on equity and higher share prices.¹⁴ Higher share prices, in turn, increased the market capitalization of U.S. stocks from \$27 billion in 1925 to \$87 billion in 1929.¹⁵ Rising prices for assets held by individuals and businesses also facilitated borrowing.

This combination of higher leverage and higher growth going hand in hand was also observed in Japan's period of rapid economic growth from the 1950s to the 1980s (Exhibit 2-2). As

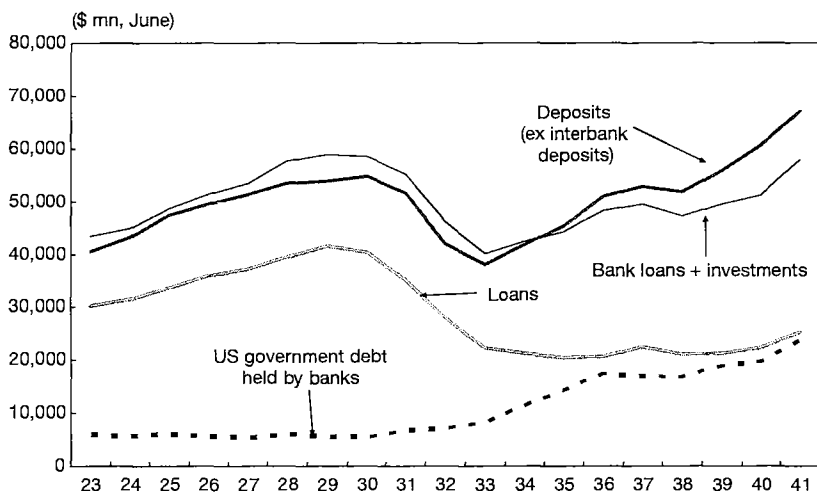
long as asset prices were rising, and earnings were growing at a robust clip, rising debt levels were not seen as a problem, and many of these companies received high credit ratings from rating agencies in Japan and abroad.

Once the economy turns down, and revenues fall, however, highly leveraged enterprises are at risk of sudden bankruptcy triggered by an inability to service their debt. It would not be surprising if firms, having witnessed the stock market crash of October 1929, and realizing the extreme vulnerability of their balance sheets in a recessionary environment, had rushed to reduce debt. This rush to pay down debt caused both the money supply and aggregate demand to shrink, tipping the economy into a balance sheet recession. The recession further depressed the prices of shares and other assets, sparking the vicious depression cycle described by equations (3) and (4). In addition, some 600,000 stock market investors had been buying shares on margin (i.e. using borrowed money), and were forced to unwind their positions to meet margin calls as share prices fell.¹⁶ In effect, these equity investors also moved en masse to pay down debt.

Friedman and Schwartz argue that the reason money stock failed to increase in line with high-powered money supply after October 1930 is because of banking crisis.¹⁷ But with the Fed adding \$1.5 billion in cash while keeping the reserves (A+B) and vault cash (C) of the banking system from falling, bank runs and resultant increases in cash hoarding by the public (the \$1.2 billion) need not result in a fall in money supply except for those deposits actually lost in failed banks (the \$1.4 billion). With those offsetting actions by the Fed, the bank runs should merely change the composition of money supply from more deposits and less cash to more cash and less deposits. On the other hand, if the private sector is rushing to pay down debt, money stock will decline no matter how much high-powered money the Fed injects into the banking system.

Just as their Japanese counterparts were to seventy years later, the U.S. private sector sought to minimize debt. By doing so, it fueled a deflationary spiral that damaged both the economy and the banking system through further declines in aggregate demand, money supply and asset prices.

Although the possibility that firms were actually paying down debt voluntarily has not received much attention in literature,

Exhibit 3-3. U.S. bank lending, investment, and deposits, 1923 to 1941

Source: Board of Governors of the Federal Reserve System (1976), Vol. 1, p. 18.

it is consistent with the average loan rate falling from 5.8 percent in 1929 to 4.3 percent in 1933¹⁸ and new issuance of corporate bonds, the closest substitute for bank borrowing, also collapsing from \$2.1 billion in 1929 to just \$40 million in 1933.¹⁹ Moreover, commercial bank borrowing from Federal Reserve banks also dropped sharply from the levels of the late 1920s. During the boom times from mid-1928 to 1929, commercial banks on average borrowed \$700 million from the Fed to meet demand for funds from the private sector. By early spring in 1930, this amount had dropped to \$50 million, or just 7 percent of its peak (line A in Exhibit 3-2), indicating a dramatic decline in private-sector demand for funds.

Even though corporate-bond yield and bank lending rate did not fall as much as it did in Japan 70 years later, this was probably because the severity of economic contraction during the Great Depression was so pronounced that firms' ability to service debt was questioned more seriously than during the Japanese recession. In contrast, Japan's GDP stayed above peak bubble levels during the Great Recession which supported firm's ability to service debt in no small way.

Bernanke (2000)²⁰ argued that a Fed injection of reserves would have been most useful between 1929 and 1931, when

banks could have used them most effectively. The fact of the matter, however, is that the banks were no longer able to make use of the \$700 million they had been borrowing from the Fed before 1929, and were actually returning reserves to the central bank. When banks are paying down debt to the Fed due to the lack of demand for funds from the private sector, there is no point to the Fed increasing reserves in the banking system. This state of affairs continued until the autumn of 1931. Although borrowings from the Fed did rise during the banking crisis of late 1931 and the national banking holiday in early 1933, the increase in both cases was temporary, and the long-term trend was definitely downward. All of these indicators point to a sharp decrease in demand for funds from the private sector from 1929 onward.

Although debtors' problems, including insolvency and high leverage, had been mentioned in the literature by Bernanke (1983) and others, their problems were often discussed only from the perspective of their effect on lending institutions, for example, how debtors' difficulties sparked the banking crisis or raised credit intermediation and agency costs. These authors never considered the destructive power of debt repayments themselves, and were unaware that a nationwide rush to pay down debt would be sufficient to reduce both aggregate demand and the money supply almost dollar for dollar without any behavioral change on the part of lenders. For each defaulting borrower who added to the hole in bank balance sheets, there were probably a thousand others who were rushing to pay down debt to avoid that fate. And it was the debt repayment by the latter group that devastated the economy and the money supply.

Temin (1976), who noticed the deleveraging of the household sector, dismissed its impact as leaving "few traces in the data,"²¹ even though there was a 33 percent decline in bank deposits and a 47 percent decline in bank lending. Mishkin (1978), who looked at household balance sheets and argued that consumption fell because household assets fell relative to their liabilities, was only looking at the negative wealth effect of a fall in asset prices. He did not consider the contractionary impact of household debt repayment itself on consumption and the money supply. In view of household leverage increasing dramatically before the 1929 crash, it would not be surprising to find that households were rushing to pay down debt as quickly as the corporate sector.

Similarly, when Bernanke and Mihov (2000) and Eichengreen (2004) discussed the fall in the money multiplier, they equated the fall entirely with the public's increased preference for cash over bank deposits.²² They never considered the possibility that the money multiplier had dropped because borrowers had started repaying debt. But debt repayment, which reduces money supply dollar for dollar, is the most powerful factor that could reduce the money multiplier. The answer to Bernanke and Mihov's question: "Why did money stocks behave so perversely (between 1928 and 1931)?,"²³ therefore, is that firms and households were all paying down debt.

Even though the frequently seen images of bank runs are consistent with an increased preference for cash among the public, this preference accounts for at most 15 percent of the decline in the money multiplier. The remaining 85 percent of the decline is due to the public's increased preference for less debt. But the authors noted above never considered the latter possibility because their fundamental assumption was that firms are always maximizing profits and seeking to borrow money.

When firms started withdrawing bank deposits to pay down debt, both the money supply and the economy imploded. This, in turn, led to deflation and a banking crisis. Even though Eichengreen (2004) suggested that borrowers may have stayed away from borrowing because of deflationary expectations, it is much more likely that their rush to pay down debt in response to the collapse in asset prices triggered the economic implosion and subsequent deflation.

Friedman's criticism

Interestingly, many passages in the well-known book by Milton Friedman and Anna Schwartz, *A Monetary History of the United States, 1867–1960*, actually support the assertion that the U.S. was suffering from an absence of loan demand during this period. For example, Friedman and Schwartz describe how George L. Harrison, president of the New York Fed, sent letters to all regional Fed presidents to persuade them to supply more liquidity in June 1930. But only two presidents—those of the Atlanta Fed and the Richmond Fed—sided with him. Those in the remaining nine districts objected, many in no uncertain terms.

James B. McDougal, president of the Federal Reserve Bank of Chicago (then, as now, America's second financial center), wrote that there was "an abundance of funds in the market, and under these circumstances, as a matter of prudence... it should be the policy of the Federal Reserve System to maintain a position of strength, in readiness to meet future demands, as and when they arise, rather than to put reserve funds into the market when not needed."²⁴ A similar objection was voiced by San Francisco Fed President John U. Calkins, who wrote "with credit cheap and redundant we do not believe that business recovery will be accelerated by making credit cheaper and more redundant."²⁵ Short-term interest rates, which directly reflect supply and demand in the money market, fell from more than 5 percent at the stock market peak to 2 percent when President Harrison sent out the letters, and to less than 1 percent twelve months later. This precipitous decline in interest rates highlights the abrupt fall in demand for funds.

Friedman presents the objections of other regional Fed presidents as evidence of a huge gulf in financial knowledge and understanding between New York and the other Federal Reserve banks.²⁶ Essentially, he argues that everyone other than the president of the New York Fed, with whom he sides, was incompetent. I suspect Friedman held this view because it never occurred to him that demand for funds could turn negative; his focus on deposit-reserve and deposit-currency ratios to explain money growth assumes that borrowers are always there.

As Friedman himself notes, the regional Fed presidents were not the only ones to disagree with the New York Fed. The Federal Advisory Council, comprising representatives from the nation's leading banks, persistently opposed the supply of liquidity for exactly the same reasons.²⁷ In other words, people working on the front lines of finance, in both the private and the public sectors, were already aware in 1930 that private-sector loan demand had fallen precipitously. They recognized that no amount of central bank-supplied liquidity would help matters when businesses were striving to reduce debt. The June 1930 postmark of Harrison's letter suggests that private-sector loan demand had dropped sharply within eight months of the stock market crash. As the banking crisis was yet to come, this is indicative of just how rapidly (and voluntarily) U.S. businesses shifted their focus from

profit maximization to debt minimization. In contrast, Japanese bank lending in the 1990s did not begin to contract until fully six years after the bubble burst.

Even New York Fed President Harrison admitted that there was no proof that an infusion of liquidity through open market operations would solve the economy's problems given the lack of demand for short-term funds. However, this did not stop him from arguing in favor of an injection. He said, "We cannot foresee any appreciable harm that can result from such a policy and believe that the seriousness of the present depression is so great as to justify taking every possible step to facilitate improvement."²⁸ But as would the proponents of quantitative easing seventy years later in Japan, he proved unable to provide a theoretically sound explanation why this policy should work.

Bank deposits and loans contracted simultaneously as firms drew down deposits to liquidate debt. Some banks may have called in loans out of fear of future bank runs, but would find no need to do so as long as companies were paying down debt on their own accord. And if the banks did not call in any loans, there would be no reason for firms to experience a credit crunch. This is why 86.4 percent of the companies surveyed by the National Industrial Conference Board reported no problems in their dealings with banks.

Liquidity alone could not have stemmed the banking crisis or corporate-debt repayments

Friedman's argument that the banking crisis was responsible for the decline in the money supply explains only 15 percent of the total decline in money supply, whereas companies' voluntary decision to pay down debt explains the remaining 85 percent. Even if we allow that the banking crisis contributed to the contraction in the money supply, there are two problems with Friedman's argument that the Fed could have rectified the crisis. One is that a banking crisis, especially on a nationwide scale, cannot occur in a vacuum. It can happen only when many people believe that bank loans have gone bad. But for so many loans to sour all at once, the economy would have to be in a far worse state than both the lenders and borrowers had expected. In the second half of 1931, when the first wave of the banking crisis struck, the nation was

nearly two years into the Great Depression, and nominal GNP had fallen 20 percent, from \$103 billion in 1929 to \$76 billion in 1931. Amid this sharp contraction in economic activity, the highly leveraged firms and households that had played a leading role in the preceding boom saw their incomes plunge, and became unable to service their debts. These personal and corporate bankruptcies sparked the banking crisis. In other words, it was a result and not the cause of the depression.

The other problem with Friedman's argument is that a banking crisis brought on by debtor bankruptcies is characterized by insolvent banks and not merely a shortage of liquidity. If the banking crisis had been triggered by a lack of cash in the system, the Fed could have managed it—as Friedman argued—by injecting liquidity. But if banks themselves were technically insolvent, no amount of central bank-supplied liquidity would have helped. Furthermore, if banks' problems during the Great Depression could actually be traced to a shortage of liquidity, we should have seen banks with insufficient funds ramping up their borrowing from the Fed. However, these borrowings declined 93 percent between 1929 and 1931, as noted. It was only in the second half of 1931 and beyond, after bank runs grew more common, that commercial banks began borrowing more from the Fed to bolster reserves. Even then they borrowed just half the amount they had during the boom period of 1928 to 1929, and that only temporarily. That 10,000 banks still failed suggests that most of the banking sector's problems were the result of borrower insolvencies leading to banks' insolvencies and not a lack of liquidity.

Even if we were to allow that the banking sector's problems were caused entirely by insufficient liquidity, the only companies the Federal Reserve could have saved by injecting funds were the 13.6 percent that reported problems in obtaining loans. This action would have had no impact on the remaining 86.4 percent, which were trying to reduce their debt load, just as the Bank of Japan's massive injection of liquidity through quantitative easing from 2001 onward did not stop companies from paying down debt. But until these firms stop repaying debt, the broader economy will not pull out of its deflationary spiral. We must therefore conclude that even if New York Fed President Harrison had been able to supply additional liquidity to the banking sector, he almost certainly would not have been able to turn the economy around.

In summary, if we accept the findings of the National Industrial Conference Board survey, we must conclude that the Great Depression was 13.6 percent a credit supply problem and 86.4 percent a credit *demand* problem.

Those seeking a villain in the gold standard are also misguided

Friedman blamed the Fed for not doing enough about the problems in the banking sector. Temin (1994) argues that policymakers' obsession with the gold standard prevented the Fed from easing, thereby exacerbating the depression.²⁹ Bernanke (2002b) goes even further, asserting that the Fed actually pursued a *restrictive* monetary policy by sterilizing specie inflows to the U.S. before 1931.³⁰

But as Eichengreen and Temin (2000) themselves had noted, U.S. accounts of the period "hardly mention the gold standard at all."³¹ This is not surprising because the availability of gold only matters when there is demand for more reserves, but there is not enough gold to back those reserves. Policymakers at the time did not mention the gold standard probably because the demand for funds was falling faster than supply, and neither the bankers nor Fed officials felt any need to add reserves. This hypothesis is consistent with bankers being opposed to the Fed injection of reserves and bank borrowings from the Federal Reserve banks falling rapidly during the 1929 to 1931 period.

Moreover, New York Fed President Harrison's proposal to inject more reserves was overwhelmingly rejected by presidents of the regional Federal Reserve banks and the Federal Advisory Board, not because they were concerned about the gold standard, but because they saw no demand for the reserves. That short-term interest rates had fallen from 5 percent to less than 1 percent in just two years after the stock market crash suggests that reserves were indeed abundant. If U.S. policymakers at the time were worried about the gold standard, as Eichengreen (2004) implies, Harrison would not have made this sort of proposal, and even if he had, the proposal would have been rejected on the grounds of concern over the gold standard. But that is not how events unfolded at all.

When demand for funds is shrinking fast, whether gold is coming in or going out of the country is largely irrelevant, because

that is not where the constraint lies. The Fed in all likelihood chose not to add reserves between 1929 and 1931 not because it felt constrained by the gold standard, but because it saw no demand for reserves.

This presents a major problem for the argument, now popular in academic circles, that the Great Depression could have been avoided with more skillful monetary policy administration. Given the sharp drop in private-sector loan demand—that is, the dearth of borrowers—there is no reason liquidity supplied by the central bank should have flowed into the real economy. This point was proven conclusively by the utter failure of the Bank of Japan’s quantitative easing to increase the money supply between 2001 and 2006. Instead, monetary easing during both the Great Depression and Japan’s recent Great Recession proved that they were both classic examples of “pushing on a string.”

It should now be clear that the key driver of the Great Depression was private-sector debt repayment, which torpedoed both money supply and aggregate demand. The resultant deflationary spiral was impervious to monetary easing, because the highly leveraged private sector was desperately minimizing debt. The present explanation of the Great Depression is also consistent with the behavior of monetary authorities, as well as what Bernanke called the “perverse behavior of money supply” of the period.

Bernanke (1995) wrote that “finding an explanation for the worldwide economic collapse of the 1930’s remains a fascinating intellectual challenge.” Now we have the U.S. part of the answer: the Great Depression was a highly unusual recession called a balance sheet recession.

Post-1933 U.S. recovery also driven by government borrowing

For some thirty years after the Great Depression, economists broadly recognized that there were limits to the effectiveness of monetary policy. In retrospect, this awareness was based on a completely faulty understanding of the situation—economists incorrectly assumed that the liquidity trap was a lender-side phenomenon, when it was actually a borrower-side phenomenon. But at least they recognized that monetary policy was not omnipotent.

The inflation and “small government” movement of the 1970s, however, sparked a revival of monetarism and neoclassical analysis, with its emphasis on the behavior of individual economic agents. Moreover, research by Temin (1989, 1994) and Romer (1991) cast doubt on the previous consensus that Keynesian fiscal stimulus had pulled America out of the Great Depression. They argued that monetary policy actually played a key role in the U.S. recovery, rejecting the long-standing view that there were limits to what monetary policy could achieve. Romer, for example, wrote that the sharp growth of the U.S. money supply from 1934 to 1941 played a key role in leading America out of the Great Depression. She argued that monetary expansion enabled the recovery by boosting private-sector investment.³²

Temin went further, asserting that fiscal policy contributed little to the post-1933 recovery because the U.S. budget deficit as a percentage of GNP did not increase after 1933.³³ For example, he wrote, “Fiscal policy deserves none of the credit [for the rapidity of economic growth from 1933 to 1937]... The government deficit did not rise. It consequently could not have an expansionary effect on the economy.”³⁴ He then added that it was the Fed’s decision not to sterilize specie inflows from Europe that increased bank reserves, which enabled the money supply to expand between 1934 and 1938. This was nothing less than an attempt to rewrite history.

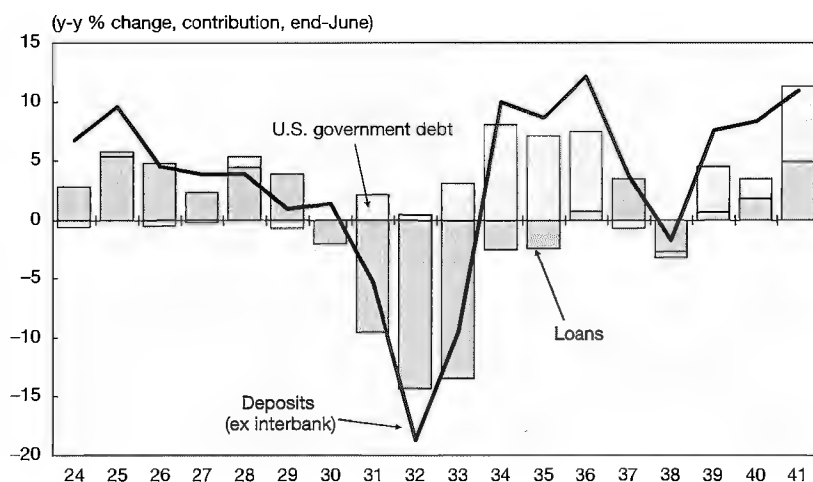
But an examination of the evidence cited by Temin and Romer from a balance sheet recession perspective leads to a markedly different explanation for the recovery. There are two fundamental problems with their views. First, gold inflows are not a sufficient condition for growth in money supply. The money supply consists mainly of bank deposits. For bank deposits to increase, someone must borrow money and spend it, as explained in Chapter 1. The recipient of the money then deposits it at another bank, which lends it out again. As this process is repeated, bank deposits (i.e. the money supply) and loans increase. After 1933, bank reserves increased sharply because of gold inflows from Europe, but growth in lending to the private sector was negligible (Exhibit 3-3). As noted, lending to the private sector continued to decline well into 1935, and recovered extremely slowly thereafter. Consequently, most of the increase in reserves languished as excess reserves.

This begs the question of whose borrowing enabled the growth in the U.S. money supply Romer noted in the post-1933 period.

Overwhelmingly, it was *government* borrowing that allowed bank assets to grow. Exhibits 3-4 and 3-5 show that it was the decline in lending to the private sector that prompted a contraction of the money supply between 1929 and 1933, and an increase in lending to the government that sparked subsequent growth. In other words, the funds flowing into the banking system from household savings and corporate debt repayment were unable to leave the banking system before 1933 due to the lack of borrowers. After 1933, they were able to leave the banking system and re-enter the income stream because the government was borrowing and spending those funds under the New Deal. It is obvious from Exhibits 3-3 and 3-4 that the growth in bank deposits from 1934 onward—a time when lending to private-sector entities remained depressed—was driven by increased lending to the government.

Exhibit 3-3 also shows that lending to the private sector remained depressed throughout this period. Even in 1941, bank lending to the private sector amounted to \$25.3 billion, down 39 percent from the 1929 figure of \$41.6 billion and up just 14 percent from the 1933 figure of \$22.2 billion. This casts doubt on Romer's claim that it was the increase in money available to the private sector that drove the recovery. The growth in money

Exhibit 3-4. Government borrowing drove sharp growth in money supply starting in 1933 (1)

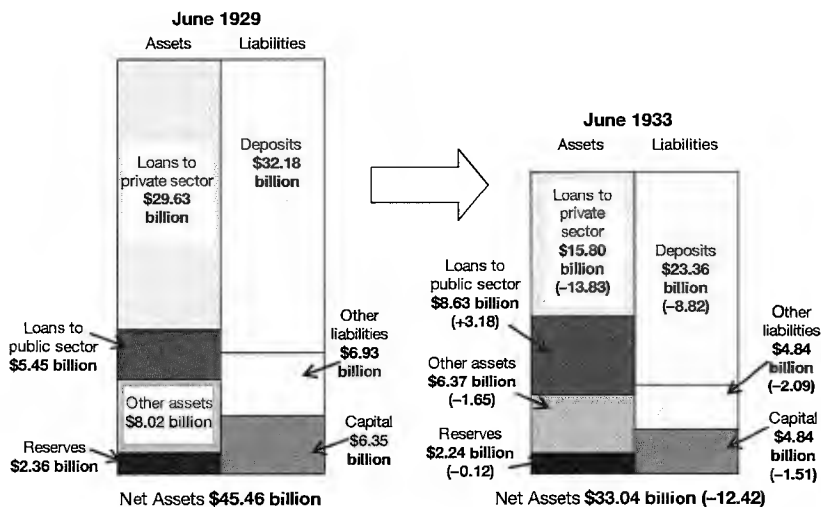


Source: Board of Governors of the Federal Reserve System (1976), Vol. 1, p. 18.

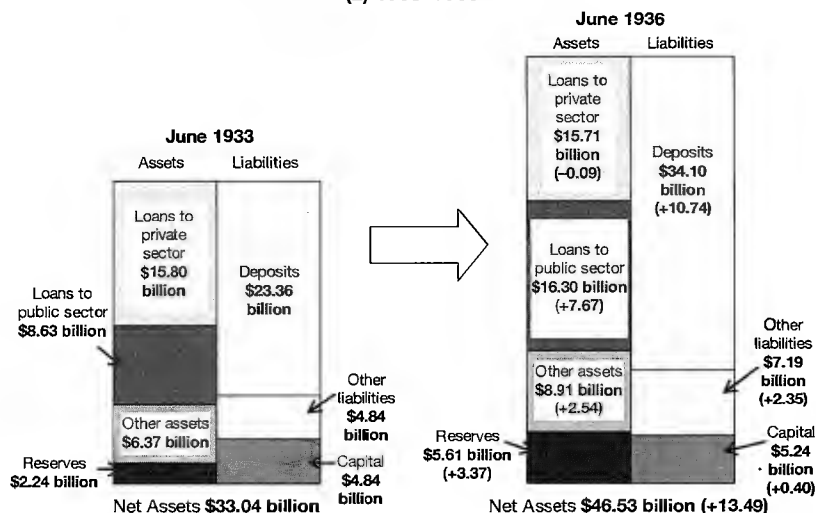
Exhibit 3-5. Government borrowing drove sharp growth in money supply starting in 1933 (2)

Aggregate balance sheet of all Fed member banks

(1) 1929–1933

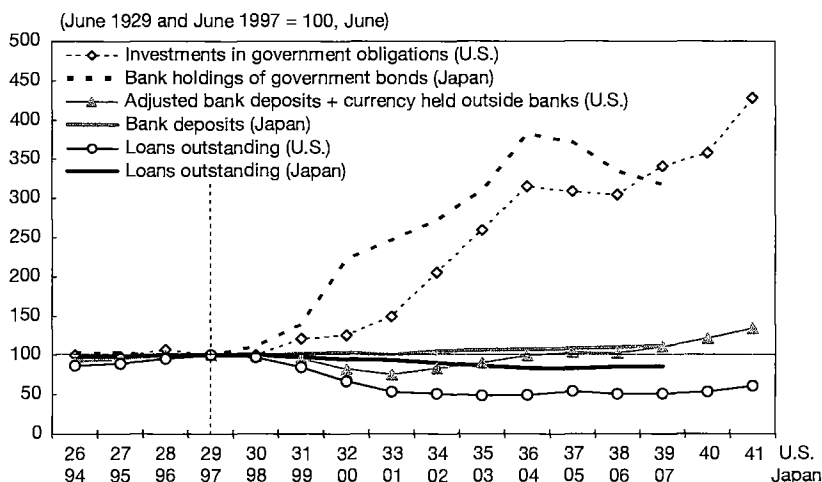


(2) 1933–1936



Source: Compiled by NRI from Board of Governors of the Federal Reserve System (1976), Vol. 1, pp. 72-79.

Exhibit 3-6. Post-1929 U.S. monetary aggregates closely resemble those of post-1997 Japan



Source: Bank of Japan, *Assets and Liabilities of Domestically Licensed Banks (Banking Accounts)*; Board of Governors of the Federal Reserve System (1976), Vol. 1, p. 18, p. 34.

supply observed in 1934 and beyond was almost entirely the result of increased government borrowing and spending.

The private sector largely stayed away from borrowing, even though the vast majority of firms had no difficulty obtaining bank loans, as noted in the National Industrial Conference Board survey mentioned. The private sector probably avoided borrowing because the devastating experience of paying down debt under duress had made firms extremely averse to taking on new debt.

This scenario was repeated seventy years later in Japan, when government borrowing kept the money supply from shrinking as the corporate sector became a net saver from 1998. Exhibit 3-6 illustrates the similar behavior of monetary aggregates in post-1929 U.S. and post-1997 Japan.

Spending and revenues should be considered, not just the deficit

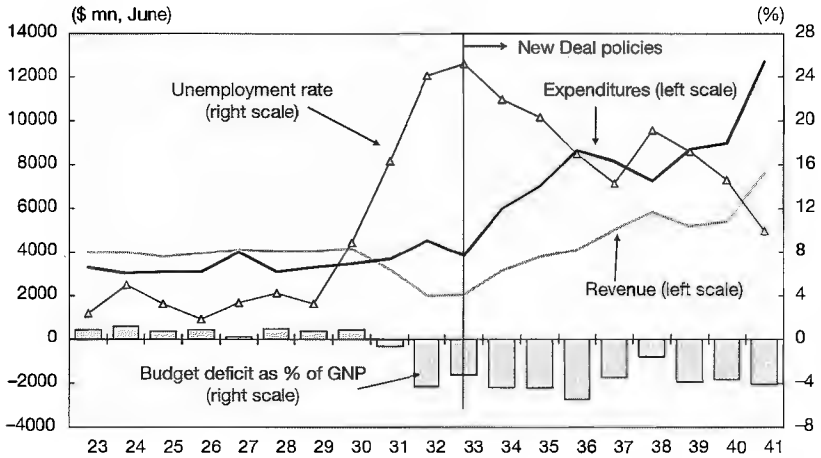
The second problem is Temin's use of the budget deficit as a measure of fiscal policy's contribution to GNP. This is a particularly inappropriate measure in a depressed economy because a large

fiscal stimulus can jump-start the economy, and produce rapid growth in tax revenue, resulting in a significantly smaller than expected deficit at the end of the day. Between 1933, when the New Deal was launched, and 1936, U.S. fiscal expenditure increased by 125 percent, producing a 48 percent increase in GNP³⁵ and a 100 percent increase in tax revenue (Exhibit 3-7). In other words, tax receipts grew at roughly twice the rate of the economy. Although President Roosevelt raised taxes several times during this period, the rebound in economic activity from the extremely depressed levels of 1933 was largely responsible for the rapid increase in tax revenue.

Starting in 1932, married couples with annual income exceeding \$2,500 and single persons with income exceeding \$1,000 were required to file personal income tax returns in the U.S. The number of returns doubled between 1933 and 1939, from 3.89 million to 7.72 million, as the economic expansion lifted more households above the filing thresholds. Personal income tax revenues also increased from \$370 million to \$930 million during the same period, a gain of 150 percent (Exhibit 3-8),³⁶ while consumer prices rose by just 1.2 percent per year.³⁷ This implies that it was an increase in real income, and not inflation, that spurred the growth in filers. The government's pump-priming measures brought about the economic recovery and with it higher incomes. The revenue growth, in turn, kept the budget deficit—government revenue less expenditure—steady as a percentage of GNP (Exhibit 3-7).

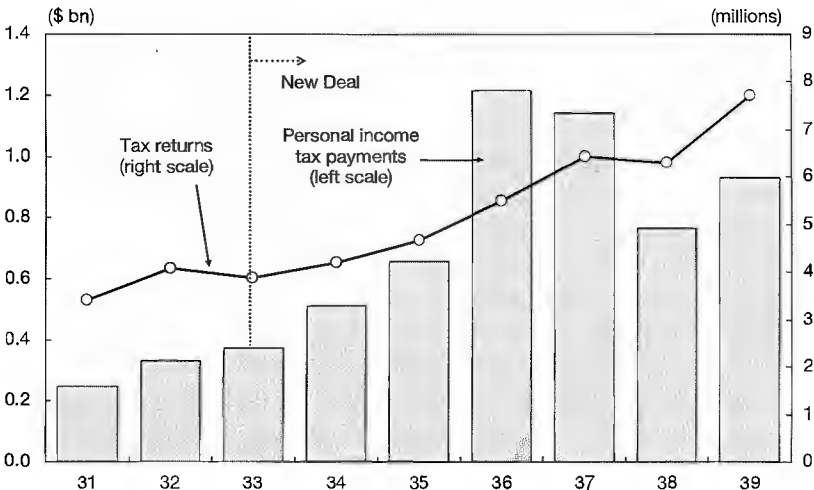
Even though Temin belittled the contribution of fiscal stimulus to the post-1933 recovery, it is unlikely that GNP would have expanded by 48 percent without the 125 percent increase in government spending. In 1936, U.S. tax revenue and real GNP had finally recovered to the levels of 1929. But 1936 GNP needed federal government spending that was 2.6 times larger than in 1929. Bank lending to the private sector in 1936, on the other hand, was still 51 percent below the levels of 1929. Between 1933 and 1936, federal government spending as a percentage of GNP rose from 6.9 percent to 10.5 percent, an increase of 52 percent. Although the budget deficit may have been stable as a percentage of GNP during this period, the 52 percent increase in the government's share of the U.S. economy means that the government was directly supporting far more economic activity in 1936 than in 1933, or for that matter, 1929.

Exhibit 3-7. New Deal policies doubled fiscal expenditures without increasing the budget deficit



Source: Board of Governors of the Federal Reserve System (1976), Vol. 1, p. 513; U.S. Bureau of the Census (1975), p. 229.

Exhibit 3-8. Personal income tax payments and returns filed rose sharply during the New Deal



Source: Shibuya (2005), p. 76.

Indeed, the concept of a full-employment deficit should have alerted Temin and Romer that a stable budget deficit (as a percentage of GNP) in the face of a vigorous recovery is no indication that fiscal policy is not stimulative. The full-employment deficit concept starts from the premise that as an economy moves toward a state of full employment, tax revenue should rise and the budget deficit should shrink. The closer the economy gets to full employment, the more the deficit shrinks.

But the U.S. budget deficit did *not* shrink despite the 100 percent rise in tax revenue from the rapid recovery. This was not an indication of the ineffectiveness of fiscal stimulus, but rather a sign that the recovery itself was heavily dependent on such stimulus. This is underlined by the 52 percent increase in the federal government's share of GNP during this period. The dependence of the post-1933 U.S. recovery on fiscal expenditure is also consistent with the collapse of the economy seen when the government slashed spending in 1937.

Fiscal expenditures during this period resulted in the construction of 651,087 miles of highway, 124,031 bridges, 125,100 public buildings, 8,192 parks, and 853 airports. It funded the creation of 2,400 murals, 108,000 paintings, and 18,000 sculptures for display in public places. More than three billion trees were planted, and some 84.4 million acres of farmland were improved. The Public Works Administration (PWA) alone spent \$4 billion to build structures as diverse as the Grand Coulee Dam in Washington state and the Lincoln Tunnel and Triborough Bridge in the city of New York, and the Works Progress Administration (WPA) directly employed eight million people in the construction of public facilities. Altogether, it is estimated that twenty-five million people were employed directly or indirectly by these projects.³⁸ To argue that these expenditures had no impact on the U.S. GNP seems preposterous.

The correct interpretation of the situation, therefore, is that the 125 percent increase in government expenditures enabled GNP to expand by 48 percent, which caused severely depressed tax revenue to double. This is why the budget deficit did not rise significantly as a percentage of GNP.

Temin (1994) and Wakatabe (2005) cite the lack of growth in the fiscal deficit as a percentage of GNP as support for their argument that government spending made an insignificant contribution to the recovery. Effectively, they are saying that the

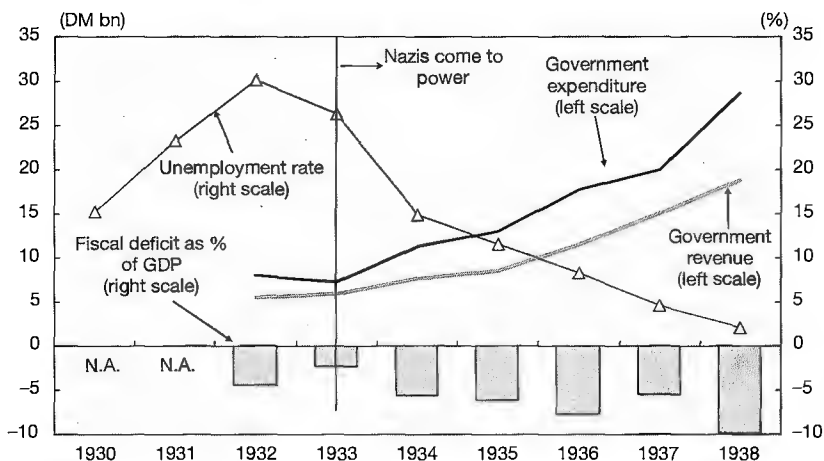
economy would have grown at the same rate had the government done nothing. If so, U.S. tax revenues would nearly have doubled even without the pump-priming measures, and the government would have been running a massive surplus in 1936. The implicit corollary to this argument is that economic growth would have been the same even if the government had followed a heavily *contractionary* fiscal policy, which highlights the contradiction inherent in their position.

There are only two possible reasons the budget deficit did not increase. Either government spending and tax revenues were both largely unchanged, or both increased or decreased together. If the former, a lack of growth in tax revenue implies little growth in incomes, which means government's contribution to economic growth was marginal. But in the case of the latter, significant increases in both tax revenue and GNP would have left the deficit unchanged despite a large contribution from fiscal expenditures. The U.S. was characterized by the second pattern in the 1930s, with large growth in both GNP and tax revenues.

The substantial increase in both GNP and tax revenue also demonstrates the large multiplier effect of fiscal stimulus. It is likely that the Roosevelt administration's willingness to implement increasingly large-scale projects as part of the New Deal came about because officials saw that the initial fiscal stimulus triggered a dramatic economic rebound and a surge in tax revenue. As the administration continued to lift fiscal expenditures, the recovery gathered momentum.

Persistently high unemployment was caused by premature fiscal consolidation

The U.S. unemployment rate never fell below 14 percent during the 1930s. Some see this as proof that New Deal policies failed to spark a recovery.³⁹ But the continued high unemployment rate was attributable to the government's premature fiscal retrenchment in 1937, which interrupted the steady string of job gains made up to that point (Exhibit 3-7). The government spending cuts in 1937 devastated the economy by causing industrial output to plunge 33 percent, and share prices to drop by nearly 50 percent, indicating once again that the economy was still in a balance sheet recession, and was being kept afloat by fiscal stimulus.

Exhibit 3-9. German fiscal stimulus reduced unemployment dramatically

Source: Mitchell (1975), p. 170; Flora et al. (1987), p. 350; Deutsche Bundesbank (1976).

The imprudence of this 1937 policy shift is underscored by a comparison with the situation in Germany at the same time. Between 1933 and 1938, steady increases in German fiscal expenditure slashed the unemployment rate from 26.3 percent to just 2.1 percent (Exhibit 3-9). Over the same period, industrial output increased 89 percent, and real GNP grew by 58 percent. Even though the budget deficit had risen to nearly 10 percent of GNP by 1938, few were complaining with the unemployment rate at 2.1 percent. A comparison of Exhibits 3-7 and 3-9 suggests that the U.S. unemployment rate might also have dropped into the single-digit range by the late 1930s if the government had not shifted into reverse by cutting spending in 1937 and 1938.

Fiscal stimulus ended the recession and resolved the banking crisis

Temin and Romer overlooked that it was actually government borrowing that was responsible for the post-1933 growth in money supply. They also missed the massive impact of fiscal spending made possible by government borrowing by focusing only on the net fiscal deficit, rather than on total government spending and revenue.

Viewed in this light, it is probably safe to say that the Great Depression was not only a balance sheet recession, but also a balance sheet recession in its purest form, that is, without government action to stem the deflationary cycle, as depicted in Equation (4). Private businesses had built up a huge debt load during the preceding asset-price bubble, and it was their decision to pay down debt after October 1929 that rendered monetary policy impotent, and sent the economy into a deflationary spiral. This also explains why the Fed “did nothing” between 1929 and 1933: it was not that the Fed did nothing, but rather that there was very little that the Fed could do given the sharp decline in private-sector loan demand.

Economists today assume that the contraction of the money supply and economic activity observed during the Great Depression were caused by a shortage of funds, and specifically by a lack of liquidity in the banking system.

But as we have already seen, only 13.6 percent of companies reported problems related to a shortage of funds, and many of these were probably experiencing business difficulties as well. In other words, even if the Fed had supplied massive amounts of liquidity, it is unlikely that many of these firms would have been able to obtain bank loans given their poor profit outlook and questionable financial health.

The argument passed down from Friedman to Bernanke—that the Great Depression could have been avoided through more skillful administration of monetary policy—may have applied to a tiny portion of the deflationary spiral that engulfed the U.S. economy. But for the remaining 86.4 percent of the economy, monetary policy was irrelevant.

When an economy falls into a balance sheet recession, plunging many borrowers (and their lenders) into insolvency, only two policy responses would produce results. One is for the government to inject capital into companies and banks, and pull them out of their negative equity positions (i.e. nationalization). The other is for the government to place large orders with these same firms to revitalize their cash flow, enabling them to pay down the debt on their own.

The U.S. government did both as part of the New Deal policies launched in 1933. First, it injected more than \$1 billion in capital into the banking system through the Reconstruction Finance Corporation’s purchases of preferred shares issued by banks.

Second, it ordered the construction of massive public works, as noted. The \$1 billion injection, equal to one-third of aggregate bank capital at the time,⁴⁰ strengthened banks' balance sheets, and enabled them to take risks again. The massive public-works orders lifted corporate cash flow as well as providing millions of jobs to stimulate the economy.

These policies arrested the deflationary spiral of the Great Depression, and paved the way for recovery. Both were *fiscal* policies that involved direct spending by the government. Consequently, they were of an entirely different nature from monetary policy actions such as the liquidity injections advocated by Friedman and Bernanke.

We can therefore see that fiscal policy, and not monetary policy, lifted the U.S. and German economies out of the Great Depression in the 1930s. It should now be clear that monetary policy could have accomplished very little with the private sector intent on paying down debt. The same was true in Japan seventy years later.

3. There is more than one kind of recession

Two types of recession

Until now, economists have assumed, if only unwittingly, that there is only one kind of recession, and that the Great Depression was just an extreme form of an ordinary recession. Furthermore, they have assumed that recessions are always caused by a supply-side shock that prevents businesses from raising needed funds. Because their theories assumed that companies everywhere are always seeking to maximize profits, they thought recessions occurred only when businesses were unable to raise funds. But this Chapter has shown that there are at least two kinds of recession: those that are a natural result of the business cycle and those that are attributable to corporate balance-sheet problems. In the former variety, businesses remain fundamentally forward looking, and as much research has already shown, monetary policy is the right tool for dealing with them. But during the latter type of recession, businesses' chief priority shifts from maximizing profit to minimizing debt, requiring a fiscal policy response.

Bernanke (2000) said the economics profession still lacks a full explanation for why the Great Depression occurred. But that is only because today's economics makes no distinction between balance sheet recessions, which can lead to traumatic events such as the Great Depression, and their garden-variety cousins. Moreover, it was frequently argued that the Great Depression was the ultimate recession, implying that the difference between ordinary recessions and the Great Depression is simply a matter of degree. To produce prolonged recessions while assuming that companies are always forward looking and profit maximizing, the profession had turned to the so-called (New) Keynesian school, with its heavy reliance on various sorts of price "stickiness." Economists in this school argue that menu (reprinting) costs and downward rigidity in wages prevent the goods and labor markets from reaching an equilibrium. But although price rigidities or stickiness can be used to explain short-term unemployment and recessions, they cannot explain longer-term downturns. This is because, in the longer run, prices move in the direction dictated by market forces.

In a balance sheet recession, when so many companies move to pay down debt at the same time, a steady fall in aggregate demand (see Equation 4) is triggered, which has little to do with price rigidities or stickiness. Furthermore, the shrinkage in aggregate demand continues until either companies finish repairing their balance-sheets, or the entire private sector (including the corporate sector) becomes too poor to save.

The view that there are at least two kinds of recession presents a great irony for economists, because it was the Great Depression that led to the birth of modern-day macroeconomics. Even though it was the shock of the Great Depression that created the discipline of macroeconomics, its practitioners never realized that the fundamental driver of the Great Depression was very different from that of ordinary recessions. As a result, economists have tried to use the same framework to explain all recessions, including the Great Depression. This has led to many unnatural, if not outright silly, constructs, particularly in the explanations of prolonged recessions. By incorporating the concept of debt minimization, the economics profession is finally freed from its reliance on gimmicks such as price and wage stickiness and rigidity to explain long-term recessions.

ENDNOTES

1. Keynes (1936), p. 136.
2. As explained in Chapter 6, lenders may substitute high-yielding foreign assets in place of low-yielding domestic assets. That would require the lenders to take foreign exchange rate risk which, in the case of Japan, has proven to be substantial on many occasions as a result of the country's persistently large current account surplus.
3. Bernanke (2000), p. 8.
4. The steep decline in U.S. GDP during the Great Depression was also part of the contractionary processes described in Equations (3) and (4).
5. Board of Governors of the Federal Reserve System (1976), vol. 1, p. 17.
6. *Ibid.*, p. 16.
7. *Ibid.*, p. 283, total from 1929 to 1933.
8. *Ibid.*, p. 34.
9. *Ibid.*, p. 18.
10. For details, see National Industrial Conference Board (1932), pp. 55–87.
11. Boyer et al., (2004).
12. Persons (1930), p. 121.
13. Galbraith (1954), p. 148.
14. Brownlee (1974), p. 288.
15. Boyer et al., op. cit.
16. Galbraith, op. cit., p. 78.
17. Friedman and Schwartz (1963), p. 332.
18. *Ibid.*, p. 464.
19. *Ibid.*, p. 487.
20. Bernanke (2000), p. 156.
21. Temin (1976), p. 172.
22. Eichengreen (2004), p. 13.
23. Bernanke and Mihov (2000), p. 135.
24. Friedman and Schwartz (1963), p. 371.
25. *Ibid.*, p. 372.
26. *Ibid.*, p. 374.
27. *Ibid.*, p. 373.
28. *Ibid.*, p. 370.
29. Temin (1994), p. 92.
30. Bernanke (2002b), p. 153.
31. Eichengreen and Temin (2000), p. 154.
32. Romer (1991), p. 30.
33. Temin, op. cit., p. 42, and Romer, op. cit., p. 16.
34. Temin, op. cit., p. 42.

35. Board of Governors of the Federal Reserve System, *op. cit.*, p. 513, U.S. Bureau of the Census (1975), p. 229.
36. Shibuya (2005), pp. 76–7.
37. U.S. Bureau of the Census, *op. cit.*, vol. 1, p. 210.
38. Jeffers (2002), pp. 87–9.
39. Kennedy (1999), p. 364.
40. Friedman and Schwartz, *op. cit.*, p. 427.

Monetary, Foreign Exchange, and Fiscal Policy During a Balance Sheet Recession

1. The problem with unorthodox monetary accommodation

Inflation and price-level targeting

The foregoing Chapters have made it clear that the primary cause of both the Great Depression in the U.S. seventy years ago and Japan's Great Recession over the past fifteen years was debt repayment by the private sector. It has also been shown that in these conditions, traditional monetary policy is powerless unless the government functions as the "borrower of last resort." This section will examine the effectiveness of inflation targets and other unorthodox monetary policy tools, which have gained many adherents in the past decade, in boosting the number of private-sector borrowers in a balance sheet recession.

It should be noted that this literature on unorthodox monetary policy starts with the premise that how deflation got started is unimportant (Krugman [1998], Svensson [2001]). In other words, they are not addressing the key reason for the fall in interest rates, namely the disappearance of willing borrowers. Our interest therefore, is to see whether these policies have what it takes to change the behavior of borrowers with balance-sheet problems.

1.1 Inflation targeting

Inflation targeting, introduced as a replacement for the ill-fated money-supply targeting of the early 1980s, actually succeeded in bringing inflation rates *down* in some countries. The question, however, is whether it can also be used to bring inflation rates *up* in an economy suffering from a balance sheet recession.

It should first be noted in this regard that in 1993, when Japanese business leaders began talking about *baransu shiito fuan shoko gun*, or “balance-sheet insecurity syndrome,” Japan still had a consumer price index inflation rate of 1.3 percent. But this increase in consumer prices could not prevent businesses from embarking on a massive effort to reduce borrowings for the simple reason that they were trying to reduce a debt overhang brought about by a fall in *asset* prices: output prices were not the issue. By FY93, listed corporations paying down debt already outnumbered those that were increasing their borrowings (Exhibit 2-4).¹ This suggests that even if the consumer price deflation that emerged in 1998 could somehow have been prevented, it would not have stopped companies from paying down debt, which was the root cause of the recession.

For an inflation target to be successful, moreover, the Bank of Japan must persuade companies to ignore their balance-sheet and credit-rating problems, and bet their survival on an increase in prices that has yet to materialize. The same is true for the bankers, who must be persuaded to lend to financially troubled borrowers on the assumption that inflation will eventually fix corporate balance sheets.

Few banks (lenders) or businesses (borrowers) would willingly engage in such risky behavior, regardless of the policies implemented by the government and Bank of Japan. Nor would the Financial Services Agency, the government watchdog on banks, which is always worried about an increase in bad loans, allow them to behave like that. But unless companies and banks modify their behavior, nothing will change, and there will be no inflation.

Firms pay down debt not just because it is the responsible thing to do, but because they fear that an outside analyst or journalist will eventually get wind of the fact that they are technically insolvent. This would be the equivalent of a death

sentence. Moreover, executives know that other firms are in the same boat. In short, we have a situation in which corporate managers will not respond to an announced inflation target until their balance sheets are repaired, know that other companies will do the same, and therefore have no reason to expect an inflation target to succeed. It is therefore highly unrealistic to assume that the mere declaration of inflation targets will be sufficient to modify corporate behavior when corporate executives all know exactly why there is no inflation.

In light of this, it is not surprising that the Bank of Japan resisted the introduction of an inflation target until the very end. In an economy characterized by the absence of private-sector loan demand and a negative marginal money multiplier, the central bank has no means of achieving a target, and it would be irresponsible to set one under these circumstances.

Some argue that the household sector will react to this target even if the corporate sector does not. But as households drew down their savings over the past fifteen years in an attempt to maintain their standard of living amid a sick economy and falling incomes, the surplus of funds in the household sector fell steadily (Exhibit 2-10). Households went above and beyond the call of duty to support the Japanese economy during this period, and were certainly not the cause of the long slump. That the household sector's financial surplus had fallen to near zero between 2001 and 2004 suggests that households are already pushing themselves to the limit, and cannot be expected to increase spending any further unless incomes increase significantly.

An inflation target should be effective in bringing inflation rates down when there is ample demand for funds from the private sector, and the central bank is in a position to choose how much of that demand to satisfy. The same target, however, will be useless in bringing inflation rates up when firms are preoccupied with balance-sheet problems, and there is no private-sector demand for funds for the central bank to satisfy or deny.

1.2 Were real interest rates too high?

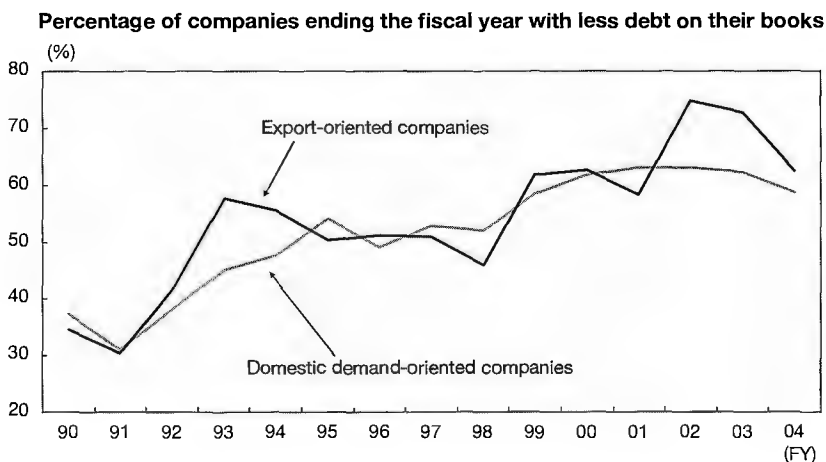
Some have also argued that deflation prompted debt paydowns by producing high real interest rates. According to this view, an inflation target would have lowered expected real interest rates by

raising inflationary expectations, thereby dissuading firms from paying down debt.

There are two problems with this argument. First, as noted, the corporate obsession with debt burdens started around 1993, long before Japan actually fell into deflation. Moreover, the debt overhang was caused by a decline in asset prices and not output prices. This makes it difficult to argue that output-price deflation was responsible for corporate debt repayments or the resultant recession. Causality flowed in the opposite direction: because firms moved collectively to pay down debt, effective demand plunged, tipping the broader economy into deflation.

The second problem with this view is that real interest rates in a globalized economy must be calculated using global and not just domestic prices. This is particularly true for Japan's many exporters, who enjoyed strong earnings throughout this period from foreign markets, where deflation was not a problem. Exhibit 4-1 compares the proportion of companies paying down debt in export and domestic demand sectors. The chart makes it clear that exporters, which do not have to face domestic deflation, were just

Exhibit 4-1. Companies in all sectors were paying down debt



Note: (1) Data are for the 1,826 companies in the first section of the Tokyo Stock Exchange (including delisted firms). (2) "Export-oriented companies" are firms in the following sectors: chemicals, steelmaking, nonferrous metals, machinery, electrical machinery, transport machinery, and precision machinery. "Domestic demand-oriented companies" are manufacturers and nonmanufacturers in the rest of the TSE's 33 categories.

Source: NRI.

as eager to pay down debt as their domestic counterparts. This means businesses in both sectors were responding to balance-sheet concerns triggered by falling domestic asset prices and not by falling output prices.²

1.3 Which came first: deflation or balance-sheet problems?

Toward the end of the Great Recession, many academics in Japan seem to have recognized the lack of private-sector loan demand and the corporate sector's focus on paying down debt. This represents a significant step forward from the late-1990s, when reflationists both inside and outside Japan ignored the lack of demand for funds, and argued that further monetary accommodation by the Bank of Japan would boost demand.

Although these pundits acknowledge that Japan suffers from anemic demand for funds, they continue to blame deflation for the predicament. Specifically, they argue that, all else being equal, deflation raises real interest rates, and discourages companies from borrowing.

Whereas I argue that deflation was the result of firms with damaged balance sheets paying down debt and thereby depressing aggregate demand, the reflationists argue that it was deflation that raised real interest rates, thereby prompting firms to start reducing debt. Both are correct in a sense, because deflation has forced *some* companies to reduce debt. Given that two patterns of debt repayment are possible, we need to ask which was the *primary* cause of Japan's long recession.

My work provides many opportunities to meet and talk with corporate executives. In the past decade and a half, just one of them has actually told me that he refused to borrow money when his output prices were steadily falling. He was the only individual I have spoken with who was worried about the relationship between debt and falling output prices: everyone else was concerned about the balance-sheet problems triggered by plunging asset prices. That the number of listed companies reducing debt already surpassed the number adding new debt in 1993—when Japan had yet to fall into deflation—suggests that businesses were trying to fix the balance-sheet problems triggered by falling asset prices.

The shift to forward-looking corporate behavior cannot be explained by output-price deflation

If deflation is the driving factor behind companies' decision to pay down debt, debt repayments should continue as long as deflation persists. But if companies are reducing debt because of balance-sheet problems, they should begin to engage in forward-looking behavior as soon as their balance-sheet repairs are complete, regardless of whether the broader economy is experiencing inflation or deflation.

In Japan, the first company of consequence to repair its balance sheet and begin to act in a forward-looking manner was Matsushita Electric Industrial, perhaps better known for its Panasonic brand, which finished cleaning up its balance sheet at the end of FY02, and proceeded to achieve rapid growth and expansion despite deflation in the broader economy. Matsushita became a media darling starting in 2003, owing to the innovative management style of its CEO, Kunio Nakamura, and its aggressive investment activities.

I bring up Matsushita because the company asked me to write an article about balance sheet recessions in a magazine for employees in early 2003. Initially I declined, thinking that I would never have time for anything else if I began writing articles for company magazines, much less those intended for internal readership. In the end though, Matsushita's corporate stature made it impossible for me to refuse. It was then my turn to ask why the company wanted to publish an article about balance sheet recessions. The answer was simple: "Because we have finished [repairing our balance sheet]."

Matsushita's revival spurred many companies to accelerate their debt-reduction programs, and around the end of 2004, corporate debt repayments began to fall sharply despite persistent deflation. By 2005, corporate borrowings from the banks had fallen to 52 percent of GDP, a level last seen in 1956 (Exhibit 2-1). In other words, Japanese businesses had finally cleaned up their balance sheets.

In January 2004, I was invited to the Davos Forum to speak at the annual Japan dinner. In my presentation I explained that Japan's recession was a balance sheet recession triggered by a sharp fall in asset prices that had prompted companies to pay

down debt. Having been given only about fifteen minutes in which to speak, I worried whether the more than 300 academic and business leaders assembled for the event would be able to grasp my abbreviated message on this new concept of economics.

But after I finished speaking, Nissan CEO Carlos Ghosn stood up and told the audience about his own experience with the balance sheet recession. He said, "When I came from Renault to Nissan, I was amazed by the size of Nissan's debt. Nothing in my education or experience had prepared me for the possibility of paying down debt at a time of zero interest rates, but in the end, I was forced to do so. I was simply unable to sleep at night knowing how much debt we were carrying." I suspect Renault's financial assistance helped Nissan greatly in reducing its debt load.

Ghosn also emphasized that, in addition to his efforts to pay down debt, Nissan's recovery was made possible by the company's rich pool of human capital.

Thanks to the covering fire provided by Ghosn, people that night were able to realize the importance of balance-sheet problems. Stories like Ghosn's are very common among Japanese corporate managers.

Although deflation may have prompted a handful of companies to begin paying down debt, the vast majority did so because their balance sheets were damaged by the bubble's collapse. Ultimately, these debt repayments weakened the economy and generated deflation, but there is no reason fixing deflation alone would have ended the recession. These recessions will persist until firms have finished repairing their balance sheets. As soon as their balance sheets are cleaned up, they will shift to forward-looking behavior even if the general price level is falling.

Central bank purchases of risk assets

Eggertsson (2003), among others, argued that even if the money supply cannot be increased by inflation targeting, the central bank can still increase the money supply by buying up assets and injecting liquidity directly into the private sector.³ These authors assert that these purchases would generate a recovery by raising asset prices and at the same time increasing the money supply.

Unfortunately, there are two main problems with this approach. First, with few borrowers left and a marginal money multiplier that

is zero or even negative, the central bank would have to make enormous purchases of assets to exert a significant impact on asset prices or the money supply. Second, these purchases would invariably expose the bank to significant risk.

Regarding the first, asset prices do not respond well to central bank purchases during a balance sheet recession. One of the key characteristics of these recessions is that private-sector investors tend to value assets strictly on a discounted future cash-flow (DCF) basis. After all, a bubble becomes a bubble when asset prices reach a level that can no longer be justified by DCF analysis.

Investors suffer heavy losses when the bubble collapses. The speculative demand that had been supporting prices falls away, and chastened investors start to rely solely upon DCF as a gauge of value. Therefore, investors will not view asset-price increases brought about by central bank purchases as being sustainable unless they are certain that the future cash flows generated by those assets will also increase.

Many governments have attempted to sustain or boost asset prices after the collapse of asset-price bubbles, but with the exception of the short squeeze orchestrated by the Hong Kong government in 1997, all have failed. The reason is simple: market participants did not believe that these efforts would lift the DCF value of assets. In October 2002, for example, the Bank of Japan launched a much publicized effort to buy shares held by Japanese banks. But this effort not only failed to arrest the decline in Japanese shares, but left the Bank of Japan with large capital losses six months later. These losses, in turn, attracted no small amount of media coverage.⁴ Even in the U.S., aggressive easing by the Fed in the wake of the Internet bubble collapse in 2000 failed to stop the NASDAQ's decline. It was only after demand for IT products had begun to pick up—that is, after the DCF of IT firms began to rise—that NASDAQ shares began to stabilize and recover.

To overcome this DCF barrier to asset prices in a balance sheet recession, the central bank might have to purchase a truly massive amount of assets to have any impact on prices. This brings us to the second problem with this approach: central banks cannot be seen as taking on a great deal of risk. This is because today's currencies are backed not by gold or silver, but only by the public's trust in the central bank. To preserve that trust, central

banks in every nation must administer monetary policy prudently. Former Fed Chairman Alan Greenspan, in his congressional testimony on July 20, 2005, commented: "Since the late seventies, central bankers generally have behaved *as though* we were on the gold standard."⁵ The point being made was that the central bank cannot take the public's trust for granted. Greenspan mentioned the late seventies because the U.S. experienced a disastrous bout of inflation after leaving the gold standard completely in 1972.

Policies that may saddle a central bank with massive quantities of risky or nonperforming assets can severely impair its credibility. Although academics may argue that such concerns are irrational, it was only very recently in the long history of human society that people began to trust currencies not backed by precious metals. It was just thirty-seven years ago, in 1971, that President Nixon severed the tie between gold and the world's reserve currency, the dollar.

Given that the public's trust in a central bank is easily lost, it would hardly be surprising if people began to doubt the money issued by a central bank that is forced to engage in dangerous behavior. This response, however irrational, may result in the loss of a trusted national currency, an outcome that would be far worse than the mild deflation experienced by Japan.

There is also the question how much the central bank would have to raise asset prices to dissuade firms from paying down debt. For companies to shift out of balance-sheet-repair mode, asset prices would have to approach those at the peak of the bubble. But in Japan's case, that would mean restoring asset prices to a level at which the land underneath the Imperial Palace in central Tokyo was worth as much as the entire state of California.

Even if the Bank of Japan was to set such an unrealistic target, no one would believe it. The Japanese people already understood that bubble prices were wrong. Indeed, a balance sheet recession starts the *moment* people realize that they have been chasing incorrectly priced assets, and that such price levels will not be revisited any time soon. Even if it were possible to restore prices to the levels prevailing during the bubble, those levels would have to be maintained *permanently* to prevent people from falling back into debt-repayment mode. Hence the difficulty of fighting a balance sheet recession using monetary policy alone.

In a dialogue between Professor Paul Krugman and myself that was transcribed in the November 1999 issue of *Bungei Shunju* magazine, he said that he did not think it was particularly important to understand the causes of deflation in Japan's economy. Although the effectiveness of monetary policy may vary to some extent with structural conditions in the economy, he asserted, the laws of economics dictate that demand can be stimulated by printing money, and therefore boosting the money supply will always have some effect.⁶

I responded to Professor Krugman by saying that asset-price inflation of 200 percent to 300 percent would be needed to pull people out of balance-sheet-repair mode, and that these bubble-era asset prices would have to be maintained in perpetuity, which was impossible. He quickly responded by saying that that is why Japan needs a 200 percent or 300 percent inflation rate.⁷

When this dialogue took place, prices in Japan were falling by only a few tenths of a percentage point each year, and some of this decline was attributable to belated market-opening measures, which allowed many foreign goods to enter the Japanese market for the first time. Moreover, in spite of all the talk of deflation in the media, Japan's Consumer Price Index never fell more than 1 percent year-on-year throughout the Great Recession except for May 2001, when the CPI Core fell 1.07 percent. GDP, meanwhile, remained above bubble-peak levels. Given a choice between these conditions and a world in which 200 percent inflation turned the yen into worthless paper and wiped out people's pensions and savings, even a child would be able to make the right decision. I remember quite clearly feeling my mouth drop open in surprise when Professor Krugman blithely recommended a 300 percent inflation rate for Japan.

Helicopter money: the cure is worse than the disease

The problem of central bank credibility mentioned also has an important bearing on the so-called "helicopter money" solution to a liquidity trap. Over the years, some economists, including Ben Bernanke and Milton Friedman, have argued that monetary policy will always work, because if worse comes to worst, one could always scatter banknotes from a helicopter, which would surely turn the economy around. Although the term helicopter money is frequently and often thoughtlessly used in economics,

it is extremely doubtful whether such a policy would bring the desired results.

The reason is simple: the helicopter-money argument is almost always pitched from the perspective of *buyers* of goods and services and almost never from that of *sellers*. The first reaction of any seller of goods and services to the helicopter money would be to close shop immediately, or demand a credible foreign currency in exchange for his or her goods. With no one knowing the value of money raining down from the sky, it would be unthinkable for sellers to accept it in return for actual goods and services. Eventually, sellers around the country would close their stores, and the economy would collapse.

Modern currencies are not backed by gold or silver. Consequently, their value is maintained only by the trust that people have in their central banks. If the central bank were to start dropping money from helicopters, the people would immediately lose their trust in it—after all, no sane person would exchange goods or services for money that fell from the sky. Such a development could easily plunge the country into a world of bartering if not hyperinflation.

Hyperinflation *would* put an end to the balance sheet recession, because firms would no longer have to worry about repaying debt denominated in the worthless domestic currency. In that sense, it is not impossible to end a balance sheet recession with monetary policy. But for this to happen, the Bank of Japan would have to become “mad” enough for people to lose their trust in it. It is worth noting that Krugman and Eggertsson have argued that the Bank of Japan should declare its intention to become an *irresponsible* central bank.⁸

But the loss of trust in the currency has a devastating impact on the economy. After all, the single most important component of the economic infrastructure in any society is the public’s trust in the local currency, and no economy has enjoyed stronger growth with bartering and foreign currency than with its own stable currency. Trying to combat a balance sheet recession with helicopter money is therefore a case of the cure being worse than the disease.

Even though hyperinflation would be a boon to heavily indebted companies, depositors and lenders would suffer losses of equal magnitude. In effect, those who had saved for the future would lose their savings and grow more reluctant to spend money.

Some may argue that helicopter money is no different from tax-rebate checks mailed to individual households. But tax rebate is a *fiscal* policy. Because it is legislated as such, it does not damage the credibility of the central bank the way helicopter money would.

Even though both government and central bank are part of the public sector, the fact that independence of central bank (from the government) has served modern societies well suggests that the public actually views the two institutions as separate entities in the same way that they view the legislative and judiciary branches of government as separate entities. Indeed, it may be appropriate to view an independent central bank as the *fourth* branch of the government.

The only case in which helicopter money would work is under the gold standard, where the value of money is absolutely certain, at least relative to gold. Helicopter money under the gold standard would simply be a redistribution of the gold stock from the public sector to the private sector, and the resultant wealth effect would likely prompt the recipients to feel wealthier and consume more.

Former Fed Chairman Alan Greenspan wondered aloud in his May 22, 2003, testimony to the U.S. Congress how a country such as Japan could fall into deflation when it is not on the gold standard and has a central bank with the ability to print money at will.⁹ In truth, however, it is precisely *because* Japan is not on the gold standard that printing money and dropping it from the sky is not a viable option. Without an anchor of value such as gold, the central bank must behave prudently to ensure that people continue to accept its money as a medium of exchange and a store of value. Friedman was right in one sense: even in the realm of monetary policy, there is no free lunch.

Ordinary inflation and hyperinflation are fundamentally different phenomena

Some may say that there is no need to go to the extreme of helicopter money, and that, instead, the central bank should pursue a much milder inflation target of a few percent. Krugman, in one of his papers, proposed that Japan guide the inflation rate to about 4 percent.¹⁰

The problem with this argument is that such a moderate inflation target would not destroy the public's trust in the Bank of

Japan, and therefore would not alter their behavior. And without a change in their behavior, even an inflation rate of a few percent will be unachievable.

Fundamentally, money is either trusted, or it is not. There is no gray area. The failure of the Bank of Japan's five-year experiment with quantitative easing starting in March 2001 to generate either inflation or growth in money supply is proof that trust in the central bank remains intact. As long as it does, nothing will happen to inflation, because people have no reason to abandon the correct and responsible course of paying down debt. In these circumstances, therefore, it is impossible for the Bank of Japan to induce mild inflation.

Even if moderate inflation is somehow created, the experience of "balance-sheet insecurity syndrome" since 1993 shows that it will not be sufficient to dissuade Japanese businesses from paying down debt. Firms will continue to reduce debt until their balance sheets become presentable again.

Although a central bank can always generate hyperinflation by acting so as to lose the public's trust, its ability to induce modest amounts of inflation depends on whether private businesses are in profit-maximization mode or not. If firms are maximizing profits, the central bank can create mild inflation by injecting more liquidity. But if firms are instead minimizing debt, no amount of liquidity injected by the central bank will generate inflation.

In that sense, hyperinflation and ordinary inflation are fundamentally different phenomena: one is not the ultimate form of the other. The previous Chapter noted that the balance sheet recession that led to the Great Depression was not simply an extreme case of an ordinary recession. Similarly, hyperinflation—which is predicated on irresponsible behavior by the central bank—is not simply a more extreme version of ordinary inflation.

Bank of Japan purchases of government bonds

Bernanke (2003), who did not deny the importance of fiscal stimulus, recommended that the Bank of Japan dramatically increase its purchases of Japanese government bonds. He argued that these purchases would not only help increase the money supply, but would also enable the government to carry out greater fiscal stimulus without increasing the private sector's future tax burden. The crux of his proposal is that interest and principal

payments on government bonds held by the central bank eventually flow back to the national coffers, and consequently the fiscal expenditures made possible by these bonds will not burden ordinary taxpayers. At first blush, this something-for-nothing proposal seems quite appealing. But it, too, suffers from a key limitation.

Purchases of government debt by the central bank invariably imply an injection of reserves into the banking system. Even though additional reserves will have no inflationary consequences as long as there is no demand for funds from the private sector, once demand returns, the central bank will face the risk of a massive credit expansion based on excess reserves already present in the system. If the central bank allows this to happen, the broader economy will experience tremendous inflation.

The central bank must therefore reverse course, and sell government debt to mop up the excess liquidity sloshing about in the banking system. That the central bank must reverse course eventually means that it cannot be counted as a permanent holder of government bonds. If people see central bank purchases of government debt as temporary, rational expectations theory suggests that their behavioral change will be similarly limited.

Indeed, the Bank of Japan has already had to reverse its behavior. After announcing the quantitative easing policy in March 2001, the bank injected some ¥25 trillion of excess reserves into the banking system by buying government bonds. Because legal reserves of only ¥5 trillion were sufficient to support the current money supply, those excess reserves were enough to increase the money supply by 500 percent—that is, to generate inflation of 500 percent—once private-sector loan demand recovered. Although those excess reserves did not present a problem when there was no demand for funds in the private sector, there are now signs that demand is picking up—bank lending to the corporate sector, for example, finally started to increase in late-2005 (Exhibit 1-3).

With corporate demand for funds finally growing again, the Bank of Japan had no choice; it announced on March 9, 2006, that it would end the policy of quantitative easing.

Bernanke acknowledges that his proposal comes at the cost of inflation, but what he does not say is *how much* inflation. In Japan's case, the ¥25 trillion of quantitative easing is equivalent to one year's fiscal deficit. By retaining this quantity of government

bonds on its balance sheet, the Bank of Japan would leave enough liquidity in the banking system to fuel a 500 percent increase in prices. What Bernanke is suggesting, therefore, is that the Bank of Japan finance the budget deficit for one year, with the understanding that this could eventually lead to inflation of 500 percent. Few people would knowingly make this trade.

The balance sheet recession and a “tax-free nation”

Several years ago, an argument called “Bernanke’s *reductio ad absurdum*” was apparently quite popular among proponents of inflation targets in Japan such as Masazumi Wakatabe, Asahi Noguchi, and Hidetomi Tanaka. Bernanke’s argument went something like this: if sustained government-bond purchases by the Bank of Japan would not generate inflation (as argued by the bank at the time), the bank should be able to purchase an unlimited amount of government debt, thereby allowing the government to eliminate all taxes. Given that this scenario (i.e. a “tax-free nation”) is clearly impossible, something must be wrong with the bank’s premise that central bank purchases of government debt will not lead to inflation.¹¹

Those making this argument want the listener to draw one conclusion: because it is clearly not possible for a nation to get by without taxes, purchases of government bonds by the Bank of Japan must produce inflation. Although it is an interesting line of reasoning, it actually makes a huge leap of logic. This is because the bank’s purchases of government debt do not generate inflation, rather the resumption of borrowing and spending by firms that have finished repairing their balance sheets do. When this happens, a massive round of credit creation will commence if the banking system is awash in liquidity, which in turn can lead to severe inflation.

But it should be remembered that when interest rates are already at zero, no amount of debt purchases by the Bank of Japan will have any effect on the economy or help firms clean up their balance sheets. Indeed, nothing happens until firms have finished repairing their balance sheets. Under the quantitative easing policy launched in March 2001, for example, the Bank of Japan injected ¥25 trillion into the banking system, but nothing actually happened until 2005, when firms finally finished paying down debt taken on during the bubble years (Exhibit 2-1).

In other words, Bank of Japan purchases of government bonds will not generate inflation until businesses finish paying down debt. Until they do, it almost seems as though the nation could function without levying taxes.

Suppose, for example, that the Bank of Japan buys ¥25 trillion of government debt under the quantitative easing policy, and holds those bonds for several years. Interest on the bonds is paid to the Bank of Japan. At the end of each fiscal year, the bank returns this interest, less expenses, to the national treasury. In effect, the public pays no interest on this portion of the national debt. If the Bank of Japan held ¥25 trillion worth of bonds, yielding 1.5 percent for two years, the interest savings for taxpayers would be ¥750 billion (i.e. $¥25 \text{ trillion} \times 2 \times 0.015$). This reduction in interest expense was probably the sole merit of the quantitative easing program (although the interest income of the private sector declined as well, so the net positive effect for the nation was less).

Businesses will eventually clean up their balance sheets as long as they are generating cash. In Japan, it became increasingly evident in the second half of 2005 that balance sheets had been repaired, and firms were starting to borrow again. At that point, the Bank of Japan could no longer allow the massive amount of liquidity that had been injected into the market to stay there, or credit creation would accelerate almost without limit once banks began lending aggressively.

When the Bank of Japan mops up the excess liquidity, the world of the “tax-free nation” comes to an end, as government debt shifts back to the private sector.

To the extent that Bank of Japan purchases of government bonds in and of themselves do not help firms reduce their debt, the bank is correct in arguing that these purchases will not cause inflation. But Bernanke's argument that a tax-free nation is not possible is also correct, because sooner or later businesses will complete their balance-sheet repairs, forcing the Bank of Japan to reverse its previous actions.

The only way in which central bank purchases of government debt could generate inflation is if the government was to take the aforementioned ¥750 billion in returned interest and add that to its other fiscal stimulus measures. The ¥750 billion increase in government spending would lift aggregate demand and therefore inflation, all else being equal. This is the only case in which monetary policy can enable fiscal policy during a balance sheet

recession. But many members of the Japanese deflation camp who used “Bernanke’s *reductio ad absurdum*” in their arguments seem to loathe fiscal stimulus, and if in charge of policy would probably use this money for fiscal consolidation (i.e. to redeem outstanding government debt). Under that scenario, no amount of bond purchases by the Bank of Japan would stimulate the economy or generate inflation until corporate balance sheets were repaired.

2. Exchange-rate policy in a balance sheet recession

No policy option for trade surplus countries

Krugman, Svensson, and Eggertsson all argued that the Japanese government should lower the yen’s exchange rate. They said this would not only stimulate the economy by boosting exports, but also add to inflationary expectations at home by raising the price of tradable goods.

The major problem with this proposal is that Japan is already running one of the world’s largest trade surpluses. Pushing the exchange rate down in a beggar-thy-neighbor policy would almost certainly elicit strong resistance from its trading partners. The opposition would focus the attention of foreign-exchange market participants on trade imbalances, and the net result could well be a higher instead of a lower exchange rate.

This is exactly what happened to the yen-dollar exchange rate during most of the 1990s, when the U.S. was running large trade deficits against Japan. The most obvious example can be found in the last week of June 1999, when Japan’s outgoing Vice Minister of Finance Eisuke Sakakibara openly announced his intention to push down the yen from 117 to 122 yen to the dollar, and proceeded to spend three trillion yen to achieve that target.

When news of the Japanese intervention reached Washington, Treasury Secretary Lawrence Summers, who understood both the decade-long Congressional anger over the trade deficit with Japan and the actual nature of Japan’s economic problems, exploded and declared that the U.S. had never approved the intervention. He argued that Japan should boost domestic demand instead of relying on external demand. Summers’s harsh public reaction to

the Japanese policy shocked foreign-exchange market participants, and prompted them to pay greater attention to the size of the trade imbalance between the two nations. In consequence, the yen *appreciated* to nearly 100 yen to the dollar.

Summers reacted as he did because a massive current-account-surplus nation such as Japan has excess savings at home, and its first task should be to mobilize its own savings by boosting domestic demand before relying on the kindness of other nations. Summers was one of the few economists who understood the nature of Japan's economic problems, and had been urging Japan to administer fiscal stimulus ever since his tenure as assistant treasury secretary. It was a natural demand to make for someone who was both an economist and the treasury secretary of a nation running a huge trade deficit with Japan.

Even though Summers's reaction in June 1999 had a profound impact on subsequent policy thinking in Japan, it was completely ignored by the foreign academics pushing for policies to weaken the yen. Four months after the event, in October 1999, I engaged in a 90-minute debate with Professor Krugman, as noted. I was shocked to learn that he was not aware of Summers' comments indicating that the U.S. government did not endorse Japan's reliance on foreign demand to pull itself out of recession. Academics may be able to earn a living without reading the news, but it is impossible for a trade-surplus nation such as Japan to pursue a weak-yen policy against the objections of the U.S. and its other trading partners.

Although Japan did not have the option to weaken the yen, its massive foreign-exchange intervention between 2003 to March 2004 to keep the yen from strengthening helped Japanese exporters in no small way. The scale of the intervention, ¥30 trillion or \$285 billion, however, was the largest on record, and prompted a barrage of criticisms from U.S. congressional and industrial leaders for blocking market forces from correcting the weakness of the yen.

Svensson (2001) and McCallum (2003) argue that because a weaker yen would create income and substitution effects pulling in opposite directions, the net effect on Japan's trade imbalance would be quite small. If Japan was to boost exports by pushing down the yen, they assert, an ensuing economic recovery and subsequent rise in imports would leave the trade balance roughly

unchanged, and therefore trading partners such as the U.S. would be willing to tolerate such a policy. But when firms are minimizing debt, rather than maximizing profits, any additional income from higher exports will be used to pay down debt. This can be seen in Exhibit 4-1, in which the percentage of exporters reducing debt continues to increase all the way to 2003, even though the yen peaked in 1995. In a balance sheet recession, the income effect from a decline in the yen is very weak and will be dominated by the substitution effect. Consequently, a policy of yen depreciation will lead to a beggar-thy-neighbor outcome that only aggravates existing trade imbalances.

Right policy option for trade-deficit countries

In contrast, if the country experiencing a balance sheet recession is running a current-account deficit, currency devaluation *should* be part of the policy toolkit. After all, no trading partner can complain if a deficit nation lowers its exchange rate to reduce its external imbalance. For a nation that is running a trade deficit and has little domestic savings, currency devaluation is the right way to reduce the deficit.

This is indeed how most countries in Asia managed to recover so quickly from the Asian currency crisis of 1997, when the sudden flight of foreign capital from Asian markets triggered a plunge in domestic asset prices, and led to potentially devastating balance sheet recessions. Korea, which was running a large trade deficit when the crisis broke, saw its currency fall by 73 percent from its peak. Although not by design, the won's plunge provided a huge boost to external demand, which was more than enough to offset the contraction in domestic demand brought about by falling domestic asset prices. Korea's trade balance quickly moved into surplus, and its economy recovered in just a fraction of the time that the IMF and the U.S. treasury department had originally predicted would be required. Thailand and Malaysia also benefited greatly from the fall in their currencies, which boosted exports, and helped them to overcome the slump in domestic demand triggered by balance-sheet problems. That all these countries moved massively into trade surplus after the exchange-rate adjustment also indicates that, contrary to McCallum's claim, the substitution effect of a falling exchange rate dominates the income effect when the economy is in a balance sheet recession.

In summary, if the country experiencing a balance sheet recession is running a current-account surplus, the correct solution is to use fiscal policy to mobilize surplus domestic savings. But if the country experiencing a balance sheet recession is running a current-account deficit—that is, it is short of domestic savings—the proper response is to bring the exchange rate down to tap external demand. Therefore, the initial condition the country finds itself in affects the choice of policy when fighting a balance sheet recession.

3. We must leave a healthy economy for the next generation

Fiscal policy is essential to the economy

Fiscal policy has played a critical role in Japan over the past fifteen years. After the bubble collapsed, the Japanese government implemented more than ¥140 trillion of fiscal stimulus, producing large budget deficits in the process (Exhibit 1-6). But given the severe negative wealth effect and the fact that businesses were minimizing debt instead of maximizing profit, it can be argued that the government actually saved the economy from a ¥1,500 trillion flood by building a ¥140 trillion levee. Annual doses of fiscal stimulus ensured that economic activity remained at above bubble-peak levels throughout the recession, despite the huge loss of national wealth and the dramatic change in corporate behavior. Not only did GDP remain steady during this period, but the ¥140 trillion of government spending made it possible for Japanese businesses to trim their debt overhang substantially.

Svensson (2003) was one of the many academics to issue dire forecasts for the Japanese economy, saying that “without effective (monetary) policy measures, [Japan] may very well lose another decade.”¹² Ironically, it was almost immediately after his prediction that a full-fledged recovery commenced.

As noted, some major companies had completed their balance-sheet repairs by March 2003, and had started to look to the future, making investments and launching new products. With the forward-looking stance of these firms placing other companies under pressure to do the same, the underlying trend began to

change in 2004. Companies reducing debt still outnumber those increasing it, but the corporate sector as a whole had begun to borrow again by late 2005. Japan was finally at the end of its long recessionary tunnel. Still, the trauma of debt repayment during the past fifteen years is so severe that more time will be needed for most companies to overcome their debt-rejection syndrome, and feel fully at ease with their financial assets as well as liabilities.

Problems with calculating the fiscal multiplier during a balance sheet recession

It has long been argued that Japan's fiscal stimulus was bad policy because it had such a low multiplier. Various econometric models have suggested that Japan's fiscal multiplier is not only low, but is also falling.¹³ But there are two problems with this view.

First, if we measure the effectiveness of this stimulus from where the Japanese economy might have been in its absence—that is, from the abyss of depression—the resultant multiplier would be huge. In other words, the true multiplier of Japanese fiscal policy is represented by the difference between an economy in the midst of a severe depression because the government did not provide any fiscal stimulus despite the loss of wealth equivalent to three years of GDP and the actual economy, in which GDP remained steady at ¥500 trillion thanks to fiscal stimulus. If the government had allowed the economy to plunge into depression, GDP would probably have fallen to a fraction of its current value. Accordingly, the fiscal multiplier measured based on the difference between GDP in that scenario and actual GDP would be huge.

Unfortunately, most econometric models are not designed to capture this kind of multiplier, because they are built on the assumption that the economy is at or near a stable equilibrium *without fiscal stimulus*. In other words, these models assume that even without fiscal stimulus, the economy will be either at 0 percent growth or on some sort of long-term growth path. But in a balance sheet recession, this assumption no longer applies. The Japanese economy in 2003, for example, required a budget deficit of more than 7 percent of GDP just to keep growth at 0 percent. Without that spending, the economy would have entered a deflationary spiral and eventually have fallen into a severe depression. Standard econometric models, however, are

not designed to measure the fiscal multiplier of an economy so far away from a stable equilibrium.

A second problem is that even though Japan's fiscal stimulus played a key role in keeping the economy from falling into a depression, the stimulus itself was never applied consistently enough to pre-empt the emergence of deflationary gaps. On the contrary, it was always administered "behind the curve"—that is, after the economy had already faltered—and was often not aggressive enough to offset fully the deflationary pressures coming from household savings and corporate debt repayment. In other words, a modest deflationary gap or headwind was often allowed to persist, which naturally tended to reduce the measured multiplier effect of the stimulus.

If, for example, the deflationary gap is ¥40 trillion, but the government provides only a ¥35 trillion stimulus, the unfilled ¥5 trillion gap will tend to push the economy into a deflationary spiral. Although the stimulus has reduced the deflationary gap from ¥40 trillion to ¥5 trillion, this remaining headwind will lower the measured multiplier of the ¥35 trillion stimulus, because the economy itself is still trying to contract. If the stimulus was ¥42 trillion, on the other hand, the drag on the economy would be completely removed, and the measured multiplier, especially for the last ¥2 trillion, would be far more impressive.

Unfortunately, the government never engaged in the kind of bold fiscal action needed to verify this hypothesis. But that massive military buildups during World War II (or prewar fiscal stimulus in Germany, as indicated in Exhibit 3-9) managed to pull so many economies out of depression suggests that there is a marked increase in the multiplier once fiscal stimulus exceeds the deflationary headwind affecting the economy. A definitive answer to this question, however, will have to wait for more empirical evidence on the use of fiscal stimulus in balance sheet recessions.

Banking-sector problems did not cause Japan's recession

As did the U.S. during the Great Depression, Japan experienced many bank failures, bank runs, and credit crunches during its Great Recession. These banking-sector problems had major

repercussions—and resulted in significant losses—for the affected individuals and businesses. It is therefore not surprising that some blamed the banking crisis for the recession and the diminished effectiveness of monetary policy. Together with many journalists, economists such as Bayoumi (1999) and Iwata (2001) argued that banking-sector problems were the main bottleneck in Japan's economy. As noted, however, the problems at banks were a *result* of the recession, not a cause.

Japan did suffer from severe banking-sector problems, including occasional credit crunches. But even if all of these problems had been fixed, the economy—and the effectiveness of monetary policy—would have improved only slightly. For the economy to recover, the corporate sector had to discontinue the debt repayment that was the primary cause of the deflationary gap. For monetary policy to regain its efficacy, firms needed to complete their balance-sheet repairs, and start borrowing again.

Both the U.S. Great Depression and Japan's Great Recession were driven by businesses responding to a fall in asset prices by minimizing debt. In both cases, the media mistook the sporadic credit crunches for the primary cause of the downturn, and focused the public's attention on the banking sector.

Meanwhile, the news that companies were quietly paying down debt of their own volition was *not* news, and therefore went unreported, both during the Great Depression and the Great Recession in Japan. Nor was there any reason for heavily indebted companies or their lenders to divulge the real story to the outside world. In both cases, therefore, the media blamed the obvious suspect—banks—when corporate debt repayment was the primary cause of both the recession and the problems in the banking sector. It seems that money lending is an unpopular business in every society and every era.

The Bank of Japan's *Tankan* survey of some 10,000 corporate borrowers demonstrated that banks were actually willing lenders and that banking-sector problems were not the cause of Japan's recession (Exhibit 2-3). In the U.S., a 1932 survey of more than 3,000 companies by the National Industrial Conference Board supports a similar conclusion.

In Japan's case, two groups of people refused to believe that there was no demand for funds, and actually established banks to prove that demand for funds was there, but Japanese bankers were

too inept to meet that demand. Takeshi Kimura, a close associate of Heizo Takenaka, the minister of the Financial Services Agency, and the Tokyo Metropolitan Government under Mayor Shintaro Ishihara, co-author of the book titled *The Japan That Can Say No*, both created banks to prove what they called the ineptness of Japanese bankers.

Since their inception, however, both banks have been doing poorly. The one put together by Kimura was accused of lending to Kimura's own family to increase apparent loan demand,¹⁴ and its deferred tax credit is considered by some analysts to be excessive.¹⁵ The bank established by the Tokyo Metropolitan Government has already lost nearly 80 percent of its capital, or ¥93.6 billion, since its creation in 2005.¹⁶ It is rare to see controlled experiments in the social sciences, but these two banks prove beyond doubt that it was a decline in demand for funds—not the supply of funds—that drove the recession.

Japan did, however, experience a severe credit crunch in 1997 and 1998 (Exhibit 2-3). This was caused by domestic and foreign investors pulling their funds out of Japan en masse, afraid that the Hashimoto administration's fiscal retrenchment would bring further economic deterioration. This tremendous flight of capital from Japan—which at the time was described in the media as *Nihon uri* or “dump Japan”—sent both the yen and Japanese stocks tumbling. Falling stock prices reduced the numerator in Japanese banks' capital adequacy ratios, as unrealized gains on banks' share portfolios, 45 percent of which are treated as capital, dropped sharply. Meanwhile, the weak yen increased the denominator by boosting the value of banks' dollar-denominated assets. The resulting drop in capital ratios forced banks to trim their asset portfolios, and triggered a nationwide credit crunch.

The government responded by following the example of the U.S. Reconstruction Finance Corporation in the 1930s, and twice injected capital into the banking system: once in March 1998, less than six months after the credit crunch had begun, and once a year later, in March 1999. This unprecedented and timely reaction promptly resolved the situation. The government also implemented a ¥30 trillion loan guarantee program for small and medium-sized firms starting in October 1998. The first injection stopped the credit crunch from worsening, and the second, together with the loan guarantee program, eliminated it, as can be clearly seen in Exhibit 2-3.

Unfortunately, there was a massive misreporting of the circumstances that led to the March 1998 capital injection by the English-speaking press, apparently because foreign reporters posted in Tokyo were unable to read Japanese. This led to a huge misunderstanding overseas of the exact nature of these injections, which persists to this very day. Those who would like to know what actually happened are referred to Chapters 6–8 of my previous book, *Balance Sheet Recession*, published by John Wiley & Sons.¹⁷

So the lesson of the Great Depression—that capital injections and public works investment are effective—was put to excellent use in Japan seventy years later. It was these two fiscal measures that enabled Japan to sustain GDP and money supply at above bubble-peak levels, even as ¥1,500 trillion of national wealth disappeared.

Choosing the burden we bequeath to future generations

The preceding sections argued for the importance of fiscal policy during a balance sheet recession, but a concern often raised is that Japan's national debt, already at 150 percent of GDP, may leave a heavy burden for generations to come. This concern for future generations causes many people to shy away from using fiscal stimulus even if they are convinced that it is a useful tool in combating balance sheet recessions. Although these concerns are understandable, there are three problems with this view.

First, there is no a priori reason to think that a particular size of budget deficit is necessarily fatal to an economy. In 1945, for example, government debt in the UK equaled 250 percent of GDP,¹⁸ but this did not cause the nation to disappear from the economic map of the world. Indeed, if the British public had chosen not to allow budget deficit to increase so much by cutting production of Spitfires and Lancaster bombers, the U.K. would have *literally* disappeared from the map and become part of Hitler's Third Reich. The nation's debt grew as large as it did because the country had to devote all its resources to defeating Hitler. The people of the U.K. made the right decision.

Even though the cost of treating a balance sheet recession, in terms of budget deficits, is not insignificant, that the next balance

sheet recession is likely to be decades, if not centuries, away means that there is plenty of time to right the fiscal ship before the next storm. There is plenty of time because those who have suffered losses in an asset-price bubble will not make the same mistake again. As long as they are still around, there will not be another bubble. And once the nation has emerged from the balance sheet recession, cyclical swings in economic activity should be dealt with using monetary policy.

Second, when considering the burden left to future generations, we should take into account not only outstanding debt, but also the health of the economy that they will inherit. After all, it may be more desirable for the next generation to inherit an economy that has been properly cared for and is on the mend, even if that means a large medical bill (national debt), than to inherit a debt-free economy (no medical bills yet) that has not received any treatment and remains in critical condition.

To understand this point more clearly, let us assume that there was a pre-1933 (present) Generation A and a post-1933 (future) Generation B in the U.S.. Generation A is the generation that, under President Herbert Hoover, refused to support the economy with fiscal stimulus in spite of a serious balance sheet recession. Because it opposed any actions that would increase the budget deficit, Generation A did not leave a burden of debt to the next generation. (In reality it did, especially in 1932, but we will ignore this for the moment.) On the other hand, it bequeathed an economy that was in the throes of the Great Depression, in which the jobless rate was well in excess of 20 percent, and GDP was only half what it had been at its peak in 1929.

As a result, Generation B was forced to undertake enormous public-works investment, starting with the New Deal, to heal the gaping wound in the economy. The U.S. budget deficit expanded to more than 30 percent of GDP in 1944, before the nation was finally able to climb out of the Great Depression.

During the Depression, poverty forced millions of young people to quit school and look for work. Their life plans were effectively scuppered by the misguided determination of the Hoover administration to balance the budget. Had it not been for the massive fiscal outlays for World War II, an entire generation could have lost its educational and vocational opportunities.

If, like today's Japan, Generation A had used fiscal stimulus to sustain economic activity at the levels of 1929 or 1930, thereby

preventing further deterioration in the economy, the legacy bequeathed to Generation B would have been far less onerous or painful. Even if Generation B had had to redeem all the government bonds issued by Generation A, it would have been better off if the spending had kept the bottom from falling out of the economy.

The same holds true in Japan. At one point, more than three million people were out of work, and many of them had a hard time making ends meet. Students were forced to give up their dreams of attending university, and families had to cut back on spending for their children's education. The plight of this generation is the real cost of ill-advised fiscal conservatism, exemplified by the Hashimoto government's 1997 fiscal consolidation.

In Japan's case, Generation A is the generation that plunged the economy into a near meltdown by implementing fiscal retrenchment through tax increases and spending cuts in April 1997, and Generation B consists of those who inherited the post-June 1998 economy. The fiscal reforms of Generation A not only produced five straight quarters of negative growth, but also prompted both domestic and foreign investors, who already knew that Japan was in a balance sheet recession, to pull their money out of the country. The resultant "dump Japan" exodus sent both the yen and Japanese stocks sharply lower, and that in turn torpedoed not only the Japanese banking system, but also the economies of all of Southeast Asia.¹⁹

In June 1998, then Prime Minister Ryutaro Hashimoto admitted his mistake, and reversed his stance on fiscal policy by pushing through a massive ¥16 trillion supplementary budget. Unfortunately, the damage had already been done. The wounds were so big and so deep that more fiscal stimulus, plus packages to repair the banking system, were needed before the economy finally stabilized. As a result, the budget deficit, instead of contracting, actually surged from ¥22 trillion in 1996, the year before fiscal consolidation was launched, to ¥38 trillion in 1999.

Japan had the opportunity to stage a recovery in 1996

This brings us to the third point: premature attempts to reduce the budget deficit during a balance sheet recession are extremely likely to end in failure. During this type of recession, only government spending can prevent the economy from falling into a deflationary

spiral. When the government abandons that role, there is a real possibility of sudden economic collapse—witness the U.S. in 1937 and Japan in 1997.

In 1996, the year before Hashimoto's fiscal reforms were launched, Japan recorded an economic growth rate of 4.4 percent, the highest among the G7 countries. Encouraged by this strong growth, asset strippers from New York rubbed shoulders with ethnic Chinese investors from Hong Kong in Tokyo hotels in late 1996 as they looked for commercial real estate to buy. They came to Japan because land prices had fallen so fast that, relative to rents, properties had become attractive investments even by international standards. If the government had not scaled back its fiscal stimulus in 1997, the growth momentum from the previous year could have been maintained, and asset prices would likely have formed a bottom with the help of foreign investors.

Instead, fiscal consolidation torpedoed the economy, which proceeded to shrink for five consecutive quarters. This economic meltdown prevented foreign investors from carrying out due diligence, and drove them out of the country. (Due diligence involves verifying the profitability of a potential acquisition through careful estimates of future revenues and expenses. An economic collapse makes it impossible to forecast revenues, rendering due diligence, in turn, impossible.) Their departure, in turn, triggered a renewed slide in asset prices. Instead of stabilizing with the help of foreign investors in 1997, commercial real estate prices started falling again. From 1997 to 2003, commercial property prices plunged another 53 percent,²⁰ further aggravating the balance-sheet problems of Japan's corporate sector.

This additional 53 percent drop in real estate prices was an unprecedented blow to the Japanese economy. Although property values in 1997 were down substantially from their peak, they were still no lower than in 1985, some six years before the bubble peaked. At that level, most Japanese companies could still absorb the losses and move forward, and for many firms, it was simply a case of paper profits disappearing or turning into small paper losses. But a further 53 percent decline from the levels of 1997 took real estate prices down to levels last seen in 1973.²¹ No company (aside from those that were debt-free) could escape serious balance-sheet damage in the wake of such a massive decline in values.

In other words, Generation B would have been much better off if Generation A had not embarked on its fiscal-rehabilitation agenda in 1997. The budget deficit might well have remained around the 1996 level of ¥22 trillion, which would have reduced the nation's cumulative post-1997 debt by at least ¥100 trillion, and left the economy in far better shape than it is in now. The economy might even have emerged from recession by 2000 instead of 2005. In short, the post-1997 trials and tribulations of the Japanese economy—as were those of the U.S. economy after 1937—were completely unnecessary.

As noted in Chapter 2, soon after becoming prime minister in 2001, Junichiro Koizumi announced his own fiscal-consolidation program centering on a ¥30 trillion cap on new government-bond issuance. This pledge would not have been a problem if the sum of household savings and net debt repayments by the corporate sector had been less than ¥30 trillion. But the collapse of the IT bubble and the repercussions of 9/11 had left a substantially larger shortfall. With the government unable to fill the shortfall because of the pledge, both economic activity and asset prices fell sharply during the first two years of the Koizumi administration. With tax revenues plunging, Koizumi was unable to keep his promise even once, and was finally forced to abandon it in 2003.

Biased conclusions against fiscal policy

The advocates of fiscal retrenchment always admonish that we must not leave debt to our children. But the two examples cited show that even if a generation tries to reduce its budget deficit, both the fiscal deficit and the economy can grow much worse if the economy is in a balance sheet recession.

Economists debating budget deficits seldom consider the health of the economy that will be passed on to the next generation, biasing their conclusions against deficit spending. This omission, coupled with a lack of understanding of the dynamics of balance sheet recessions, has made them excessively reluctant to administer the only medicine that can treat this type of recession: fiscal stimulus.

The bias, in turn, made economists rely excessively on monetary policy even during the balance sheet recession. Some of the ideas mentioned, such as inflation or price-level targets and

quantitative easing are really acts of desperation to make monetary policy work in this sort of recession. Other remedies suggested include changing the maturity structure of government debt and central bank purchases of tomato ketchup. These measures may make the largely ineffective monetary policy work infinitesimally better (although there is no guarantee here either). There is also nothing wrong with coming up with new ideas to deal with a difficult recession.

But the sad fact during the past 15 years was that the enormous amount of time and effort expended debating these acts of desperation distracted the attention of the policymakers and the public from the fiscal policy that was actually supporting both the economy and the monetary policy. Moreover, the bashing fiscal stimulus received in the press for resulting in some pork-barrel projects made it difficult for policymakers to push for more stimulus, which could have shortened the recession. Now that we know which policy is supporting which, it is hoped that in a future balance sheet recession, policymakers will focus their attention first and foremost on the policy that works, and if there is any time left over, ponder other ideas that may help when the circumstances are right.

ENDNOTES

1. In FY93, of the 2,450 listed companies for which it was possible to compare the change in interest-bearing debt, 1,111 or 45.3 percent increased debt over the previous fiscal year, while 1,189 or 48.5 percent reduced debt. See Exhibit 2-4 for trends over time.
2. Inflationary or deflationary pressures Japanese exporters faced may be approximated by the yen's real effective exchange rate shown in Exhibit 6-5.
3. Eggertsson (2003), p. 5.
4. Reported in the May 23, 2003, editions of the *Nihon Keizai Shimbun*, *Mainichi Shimbun*, and *Sankei Shimbun*.
5. U.S. House Committee on Financial Services (2005), p. 33.
6. Koo and Krugman (1999), p. 132.
7. *Ibid.*, p. 138.
8. Krugman (1998), Eggertsson (2003).
9. See Greenspan (2003) and Bloomberg (2003).
10. Krugman, *op. cit.*
11. See Tanaka (2006), pp. 20–1.

12. Svensson (2003), p. 3.
13. For example, see Hori and Aoki (2003), p. 8.
14. *Shukan Toyo Keizai* (2006), March 18, p. 23.
15. Japan Center for Economic Research (2007), pp. 57–67.
16. See *Nihon Keizai Shimbun* (2007).
17. Koo (2003a), pp. 145–51.
18. Estimate by NRI based on Mitchell (1975), pp. 702, 726, 790 and Mitchell (1984), pp. 600–3, 828–35.
19. For details, see Koo (2003a), Chapter 9.
20. Calculated from Japan Real Estate Institute's Urban Land Price Index.
21. *Ibid.*

Yin and Yang Economic Cycles and the Holy Grail of Macroeconomics

1. Bubbles, balance sheet recessions, and the economic cycle

Bubbles and balance sheet recessions repeat themselves

We have already established that the trigger for a balance sheet recession is the collapse of a nationwide asset-price bubble. These bubbles are usually a result of private-sector overconfidence about future economic prospects. The Japanese became overconfident in the late 1980s as the entire world sang the praises of Japanese management techniques. In the late 1990s, the belief that the IT revolution was the most important development since the industrial revolution prompted people and investors around the world to grow overconfident.

Bubbles, in turn, are usually pricked by tighter monetary policy implemented in response to an overheating economy and a social outcry over higher asset prices. Some bubbles also collapse under their own weights. The resulting plunge in asset prices wreaks havoc with private-sector balance sheets, forcing firms to pay down debt and decimating their demand for funds. Ironically, the resultant balance sheet recession makes monetary policy largely ineffective, forcing fiscal policy to play a greater role.

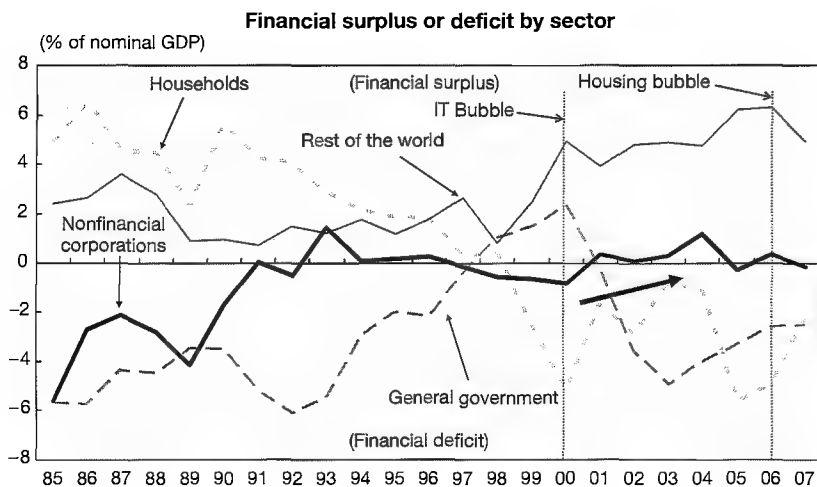
Monetary policy does not regain its effectiveness until firms have finished their balance-sheet repairs, and are willing to borrow money again.

In its place, fiscal policy—government borrowing and spending—comes to play the critical role in keeping the economy and money supply from shrinking. With sufficient time and fiscal support, balance-sheet problems will eventually be resolved. But for many business executives, the trauma of paying down debt in a severe recession is likely to remain, and they remain averse to borrowing even after finishing their balance-sheet repairs.

That the corporate sectors in Japan, Germany, and even the U.S. have been in financial surplus since 2001 suggests that the debt-rejection syndrome is very much at work in these countries after the bursting of the IT bubble (Exhibit 5-1; this point is also discussed in Chapter 7). Historically low long-term interest rates despite higher oil prices and resultant inflationary concerns are fully consistent with the weakness of corporate demand for funds in these countries.

For the private sector to shed totally its aversion to debt takes a great deal of time and confidence building on the part of corporate executives. From that point until the return of the overconfidence that is the prerequisite for the next bubble—namely, the desire to invest even if it means going into debt—will take decades, if

Exhibit 5-1. U.S. companies develop aversion to debt



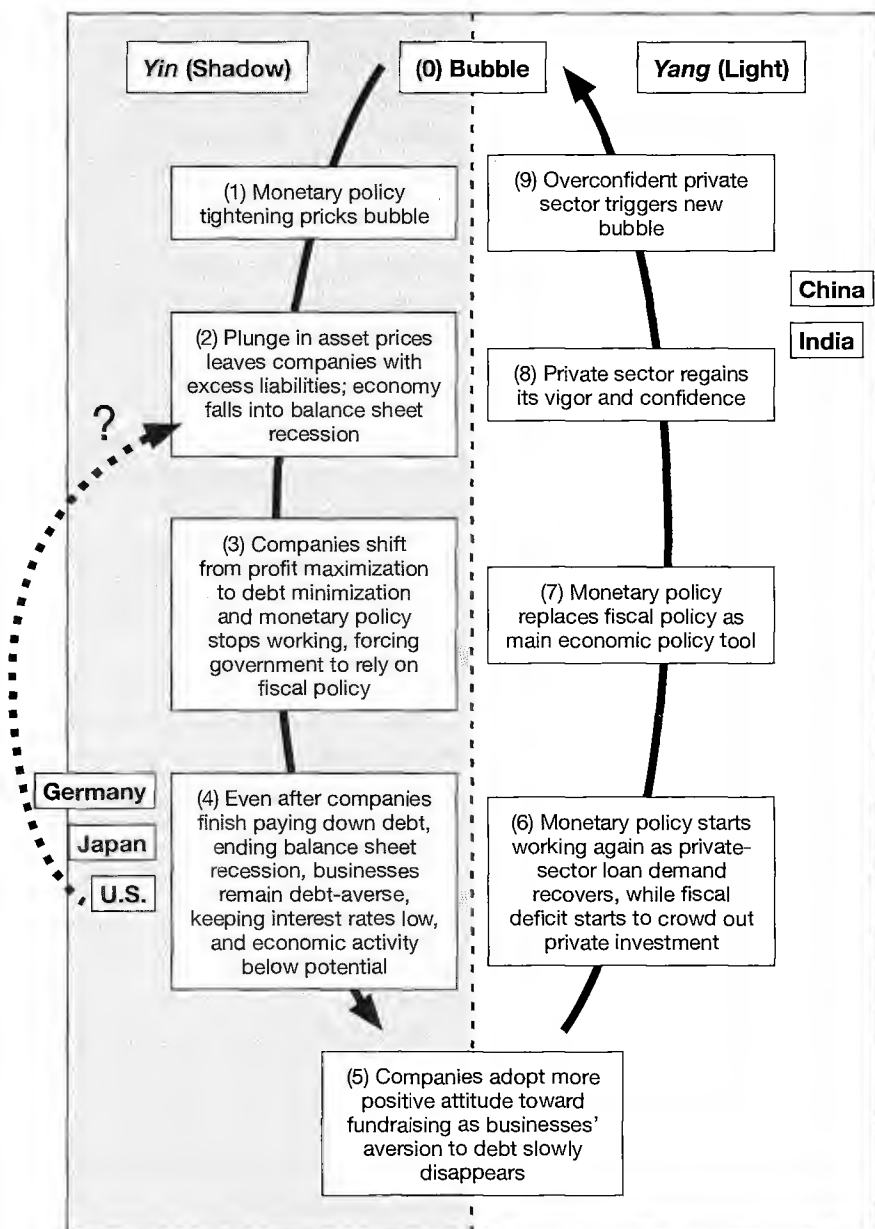
Note: Figures for 2007 are for first to third quarters only.

not generations. It takes that long because those who have lived through a bubble and its bitter collapse vow never to make the same mistake again. So the next bubble cannot occur until those who experienced the last one either die or leave the workforce. That certain steps must be taken before the economy can move on to the next step suggests that there is a pattern, or cycle, an economy goes through that may take many decades to complete.

If we treat the asset-price bubble as the starting point of the cycle, the stages are as follows:

1. The central bank pricks the bubble by tightening monetary policy. Some bubbles may collapse under their own weights.
2. The resultant plunge in asset prices leaves firms with debt-ridden balance sheets, and forces them to shift from profit maximization to debt minimization. The economy falls into a balance sheet recession.
3. With companies paying down debt and no demand for funds from the private sector, monetary policy loses its effectiveness, forcing the government to rely on fiscal policy to maintain aggregate demand.
4. Eventually firms finish paying down debt, bringing the balance sheet recession to an end. But they are still averse to taking on new debt, and households continue to save. That combination keeps interest rates low. The economy, on the other hand, begins to pick up as companies start to invest the cash flow that had been earmarked for debt repayment.
5. The corporate aversion to borrowing gradually disappears, and firms adopt a more positive attitude toward fundraising.
6. Private-sector demand for funds recovers, and monetary policy regains its effectiveness. Meanwhile, the fiscal deficit starts to crowd out private-sector investment.
7. Smaller government comes back into fashion, fiscal-reform measures are implemented, and monetary policy replaces fiscal policy as the main economic policy tool.
8. With the economy healthy, the private sector regains its vigor and confidence.
9. An overconfident private sector triggers the next bubble.

And that takes us back to the beginning of the cycle.

Exhibit 5-2. The *yin-yang* cycle of bubbles and balance sheet recessions


Source: NRI

For a nationwide asset-price bubble, this cycle may easily take two generations, or about six decades, to play out, because people must completely forget the mistakes that led to the previous bubble. For a smaller bubble, the length of time the economy has to spend repairing balance sheets will be proportionally shorter. The length of the cycle also depends critically on whether the government adopts policies matched to the current phase of the economy.

Yin and yang economic cycles

The cycle is easier to understand if we break it down into two main phases, which I will call *yin* (shadow or moon in Chinese) and *yang* (light or sun). Stages (1) through (4) belong to the *yin* phase, and stages (5) through (9) make up the *yang* phase.

In a *yang* economy, private-sector balance sheets are healthy and companies seek to maximize profits. In this world, the smaller and less intrusive government is, the better it is for the economy. Having a forward-looking corporate sector with a strong appetite for funds also means that monetary policy is highly effective. Fiscal policy, on the other hand, should be avoided, because of its potential to crowd out private investment. In the *yang* phase, therefore, monetary policy should be the main tool of economic policymakers. All economic theory in the literature that is based on corporate profit maximization implicitly assumes that the economy is in a *yang* phase.

But the situation is reversed in a *yin* economy. During this phase, private-sector firms have sustained damage to their balance sheets as a result of the fall in asset prices, and are therefore focused on shoring up their financial health by minimizing liabilities. With many firms struggling to minimize debt at the same time, a fallacy of composition problem sets in, as noted, and the economy heads toward a contractionary equilibrium known as a depression.

In this phase, monetary policy is ineffective, because firms are all rushing to pay down debt, and private-sector demand for funds is essentially nonexistent. Because the government cannot tell companies not to repair their balance sheets, all it can do is to do the opposite of what the private sector is doing. In other words, it must borrow and spend the savings generated by the

private sector, so that household savings and corporate debt repayments can be returned to the income stream. Fiscal policy therefore becomes absolutely essential. During this phase, there is no danger of crowding out because the private sector is paying down debt instead of borrowing money to invest.

The key difference between *yin* and *yang* phases is the financial health of the private sector. In a *yang* economy, private-sector balance sheets are strong, asset prices are high, and businesses enjoy solid credit ratings. These conditions drive companies to take risks in a bid to expand operations and maximize profits. As long as businesses are maximizing profits, Adam Smith's "invisible hand" guides the economy toward prosperity and growth.

But in the *yin* phase, the private sector's financial health is impaired. If the government does not offer help in the form of fiscal spending to return excess private-sector savings to the income stream, the invisible hand will work to push the economy into a deflationary spiral until either the private sector becomes too poor to save or the private sector debt overhang is removed. Without removing the debt overhang, however, the economy can never hope to return to the *yang* phase.

It should be noted that the *yin* phase need not necessarily mean lower economic growth or falling asset prices. It all depends on whether economic policies are matched to the needs of that phase. If the government consistently applies an appropriately sized fiscal stimulus, the economy can continue to grow and share prices can rise even in a *yin* phase. Similarly, even in the *yang* phase, the economy and asset prices can do poorly if the government persists in running large budget deficits, pushing interest rates higher, and crowding out private-sector investment.

Since the *yin* and *yang* phases of a cycle will span years if not decades, the usual cyclical or inventory-driven business cycles will coexist within the *yin-yang* cycles. In other words, numerous ordinary recessions can happen *within* both *yin* and *yang* phases of a cycle.

Putting current economic conditions in the context of this cycle, it would seem that Japan currently finds itself between stages (3) and (4), with the corporate sector still in financial surplus. But with many companies having already finished their balance-sheet repairs, Japan is possibly much closer to (4) than to (3). The U.S., which sustained only limited damage from the

collapse of the Internet bubble in 2000, where many companies had finished repairing their balance sheets by the end of 2003, is squarely at stage (4). However, this does not take into account the collapse in the U.S. housing bubble and the subsequent subprime fiasco. A hard landing here would send the U.S. economy back to stage (2) or (3). Germany, whose corporate sector was heavily involved in the 2000 IT bubble (Exhibit 1-10), has needed time to recover from the resulting fallout, and also finds itself in stage (4). So each of the world's three largest economies is now in the *yin* phase of the cycle.

The stage (4), where the economy is doing relatively well but the demand for funds remains lackluster, is also prone to many mini-bubbles. This is because fund managers who are unable to place their funds in traditional corporate borrowers are forced to look for unusual investment opportunities elsewhere. The massive inflow of funds to subprime borrowers in the U.S. during 2004 to 2006, and the inflow of funds to commodities such as oil that is continuing to this day (February 2008), are examples of this phenomenon. Because these mini-bubbles also distort resource allocation in the economy, there may be occasions where it is better for the society to let the public sector procure the funds and invest it in education or some other worthy cause, rather than allow the private sector to waste the funds in bubbles. The problems of mini-bubbles are not likely to disappear until corporate (or even government) borrowers resume their fund raising activities.

China, of course, is in the *yang* phase. But its large current-account surplus means that it is exporting capital. With the world's three largest economies in the *yin* phase and China exporting capital, it is no wonder that the global economy is awash in liquidity, and that interest rates around the world are as low as they are.

The length of time it takes for the U.S., Japanese, and German economies to graduate to stages (5) and (6) will depend on how quickly their firms repair their balance sheets, and how soon executives manage to overcome their aversion to debt. Unfortunately, there are few historical guidelines to indicate how long this aversion is likely to last.

One precedent is provided by the Great Depression of 1929 and its aftermath. That it took U.S. interest rates thirty years (until 1959) to return to the average level of the 1920s (4.1 percent

for both short- and long-term rates) suggests that the aversion to debt can persist for an extended period (Exhibit 2-12). That interest rates remained so low for so long in spite of massive fiscal expenditures for the New Deal, World War II, and the Korean War suggests that the offsetting fall in private-sector demand for funds must have been very large. Although there was an accord between the Federal Reserve and the Treasury to keep long-term rates at 2.1 percent until 1951, even in 1952 the average long bond yield was only 2.65 percent, which implies that the market rate was probably not that different from the administered rate.

More recently, the U.S. credit crunch of 1991–93 mentioned in Chapter 1 caused many companies to remain hesitant to borrow until the Internet boom commenced in 1997, even though the U.S. economy began to recover strongly in 1994. They stopped borrowing again when the Internet bubble collapsed in 2000, and some began reducing debt. Exhibit 5-1 illustrates this recent aversion to debt in the U.S. corporate sector. On the basis of these two examples, it is probably safe to say that corporate fund procurement will remain lackluster for years to come in all three countries.

Once companies finish repairing their balance sheets, they can redirect the funds they were using to pay down debt to forward-looking projects, providing a significant boost to the economy. As a result, stages (4) and (5) are characterized by relatively high GDP growth accompanied by what, under normal (*yang*) circumstances, would be unrealistically low interest rates. Between 1946 and 1959, when U.S. interest rates finally returned to normal levels, nominal GDP growth averaged 6.7 percent per year, while long-term interest rates averaged just 2.8 percent. The same phenomenon was observed in the U.S. starting in 2003. In the first half of 2006, for example, the benchmark ten-year Treasury bond was yielding less than 5 percent, even though nominal GDP was growing by 6 percent to 9 percent. This is in spite of headline inflation rate reaching as high as 5 percent and oil climbing above \$60/bbl for the first time. In Japan too, nominal GDP growth is likely to equal or exceed the benchmark long-term interest rate until businesses overcome their aversion to debt, and begin actively raising funds again.

2. The mistake of applying *yang* tools to a *yin* world

The economics being taught in our universities today is almost always based on the assumption that the economy is in a *yang* phase. Consequently, most policy recommendations from economists presume that firms are forward looking and trying to maximize profits. The recommended response to a recession, therefore, almost always consists of a more activist monetary policy and reductions in the fiscal deficit to prevent crowding out. Structural reforms aimed at reducing the size of government are also policies for a *yang* world.

But monetary policy is ineffective when there are no private-sector borrowers, and attempts to reduce the budget deficit will only hurt the economy and increase the deficit if the economy happens to be in the *yin* phase. In 1997, for example, fiscal retrenchment was pushed by conventionally minded economists at the IMF and OECD and by Japan's own Ministry of Finance under the Hashimoto government. But despite huge tax increases and spending cuts, tax receipts actually fell as the economy contracted for five consecutive quarters. That collapse, in turn, dramatically increased the fiscal deficit from ¥22 trillion in 1996 to ¥38 trillion in 1999.

It was also during this period that officials at the Ministry of Finance and many conventionally minded economists argued—based on principles applying only in *yang* phases—that large budget deficits would push interest rates sharply higher. But the facts tell a very different story. In April 1997, when the Hashimoto administration embarked on its contractionary fiscal policy, the yield on the ten-year government bond stood at 2.3 percent. It subsequently dropped below 0.8 percent as the budget deficit increased by ¥16 trillion to ¥38 trillion. In other words, Hashimoto's fiscal retrenchment caused two phenomena unthinkable in a *yang* world—a much *larger* budget deficit, coupled with a sharply *lower* government bond yield—because the economy was actually in a *yin* phase.

In Germany, attempts to reduce the budget deficit and pursue structural reform between 2000 and 2005 failed repeatedly to turn either the economy or the budget deficit around. They were unsuccessful for the simple reason that the policies were designed

for a *yang* economy, when Germany was in a *yin* phase. The German economy began to recover only after corporate balance sheets became presentable in 2006.

First task: determine whether economy is in a *yin* or *yang* phase

It is critical that the government recognize which phase the economy is in, and then implement economic policies tailored to that phase. Indeed, the time it takes for an economy to pull itself out of a *yin* phase may well depend on how quickly people discard their *yang* perceptions, and adopt policies suitable for a *yin* world.

This is not as easy as it sounds, because most people tend to regard smaller government and self-reliance on the part of the private sector as universally correct precepts that apply under all circumstances. They do so not only because these principles seem correct, but also because they are associated with the rapid economic growth and prosperity typical of *yang* phases. But the truth of the matter is that the economy prospered under smaller government because it was already in a *yang* phase with healthy corporate balance sheets.

Furthermore, it is difficult for ordinary people to see that recessions or liquidity traps are a result of their own efforts to repair their balance sheets. At the individual level, after all, people are doing the *right* thing by trying to pay down debt to improve their financial health, and they quite naturally believe that the economy will improve if everyone else does the same.

The waters are muddied even further when pundits and members of the media start to argue that the recession can be overcome if only companies work harder to come up with better goods and services. Over the past fifteen years, senior officials of business organizations and the heads of successful corporations in Japan have incessantly argued that things will improve if only the private sector helps itself without relying on the government. They argue that since there are winners and losers even in recessions, losers can become winners—thus pulling the economy out of recession—if only they try as hard as the winners.

Although this is the correct argument to make during a *yang* phase, it is a terrible mistake in a *yin* phase. In a *yin* phase,

leakages in the economy's income stream (i.e. funds that enter the banking sector, but cannot leave it because of a lack of borrowers) will continue as long as the household sector is saving, and the corporate sector is not borrowing, regardless of the efforts made by individual companies to improve their products and services. As long as leakages remain, the economy will continue to slide toward a contractionary equilibrium. Ironically, the harder companies work to fix their balance sheets, the more aggregate demand will fall, and the sicker the economy will grow.

In these conditions, both winners and losers are competing for a share of a dwindling pie, and no efforts on their part will increase the size of that pie. Of course, it is important for firms to "help themselves" whatever phase the economy is in. But when self-help involves paying down debt, the broader economy will fall into a deflationary spiral unless the government steps in to take up the corporate debt repayment and household savings, and put them back into the economy's income stream.

The combination of a natural desire at firms experiencing balance-sheet problems to keep their difficulties a secret and conventional economic theory's lack of consideration for corporate debt minimization created a situation in which most government officials and members of the media did not realize the primary cause of the recession. This misunderstanding drove the media to call for orthodox (i.e. *yang*-based) monetary accommodation and fiscal retrenchment, which only made the economy worse, and delayed the recovery.

In this situation, someone who is able to see things from a macroeconomic perspective must stand up and tell the public that the economy is experiencing fallacy of composition problems, and that an agent standing outside this fallacy, namely the government, needs to offset the actions of the private sector. That person must make it clear that the adoption of policies designed for a *yang* phase will hurt the economy, and make the ultimate damage worse, as happened in the U.S. in 1937 and in Japan in 1997.

Interestingly, Keynesians made similar mistakes in the opposite direction in the 1950s and 1960s. Not realizing that their policy recommendations were valid only during a *yin* phase, they tried to fine-tune major economies using fiscal policy. But their efforts only resulted in more inflation and higher interest rates, because the economies were already in a *yang* phase. The result was disastrous: resource allocation was distorted,

inflation accelerated, interest rates crept upward, and growth often stagnated. Keynesian policy, so highly touted after the Great Depression, gradually lost credibility, and fiscal stimulus itself came to be shunned.

The pros and cons of balanced-budget arguments

The adoption of *yang* policies such as fiscal retrenchment during a *yin* phase, and the adoption of *yin* policies such as aggressive fiscal stimulus during a *yang* phase will both harm the economy. However, the former mistake has the potential to inflict far greater damage. Whereas *yin* policies during a *yang* phase can bring about inflation, high interest rates, and inefficient resource allocation, *yang* policies during a *yin* phase can lead to massive unemployment, and plunge the economy into depression.

This asymmetry of danger needs to be emphasized because fiscal consolidation and a balanced budget find a receptive audience in any era, particularly when the government is running large budget deficits. Over the years, this has led policymakers in many nations to adopt fiscal-consolidation policies at inopportune moments, with tragic consequences. It was U.S. President Herbert Hoover's faith in balanced budgets that sent the global economy over the precipice into depression. Heinrich Brüning, the German chancellor at the time, was also an advocate of balanced budgets, and under his leadership an already weak German economy soon collapsed.

This double failure of economic policy in the U.S. and Germany helped to lay the foundations for the rise to power of men such as Hitler, who under ordinary circumstances would never have been elected.

Aggravating the situation was the fact that Hitler proceeded to implement precisely the kind of aggressive fiscal policy that Germany needed to deal with the extreme *yin* phase it found itself in. His policies succeeded beyond his wildest dreams, as unemployment fell from almost 30 percent to just 2 percent (Exhibit 3-9). That success elevated him to godlike status. Hitler soon grew overconfident, and launched the conflict that would become World War II, the greatest tragedy in human history.

Furthermore, it was the widening economic gap between Germany and other European powers such as the U.K. and

France that helped convince Hitler that Germany could win a war with them. The U.K. and France had fallen behind because they listened to balanced-budget advocates, thereby delaying their recoveries from the long recession.

In the U.S., the public-works projects launched under the New Deal finally sparked a recovery. But even Roosevelt was not immune to the charms of the balanced-budget proponents, and in 1937 he reversed course by announcing a fiscal retrenchment, sending the U.S. into a severe recession that widened the economic gap with Germany. Roosevelt had defeated Hoover in 1932 with a platform calling for fiscal consolidation, and until this 1937 failure, was not a true proponent of aggressive fiscal stimulus. The events of 1937 alerted Roosevelt to the importance of fiscal policy. But at the same time, the U.S. slowdown in 1937 made Hitler more confident. Germany, for example, was extremely wary of Boeing's four-engine B-17 bomber, which was completed in 1935, because its own Luftwaffe had no comparable aircraft. But the service introduction of the B-17 was delayed by a lack of funding, as the government cut back on spending, and when Hitler invaded Poland in September 1939, only thirty of the planes had been deployed.

What these events suggest is that complacency in the warm glow of fiscal consolidation and balanced budgets can lead to major tragedies. In this case, the tragedy was multiplied because a dictator adopted fiscal policies properly matched to a *yin* phase. British economist Joan Robinson famously stated: "I do not regard the Keynesian revolution as a great intellectual triumph. On the contrary, it was a tragedy because it came so late. Hitler had already found how to cure unemployment before Keynes had finished explaining why it occurred."¹ This danger persists even today.

Germany, for example, had just experienced a balance sheet recession, but the Maastricht Treaty prevented it from applying the fiscal stimulus it needed. This deepened the recession, and contributed to the rise of neo-Nazi groups in high-unemployment areas of the former East Germany, in a development reminiscent of Brüning's age. Today, of course, both the global economic environment and the German social security system are in far better shape than they were seventy years ago, and problems have yet to get out of hand. Yet the danger remains in Germany

and elsewhere that policymakers will cling to the fine-sounding concepts of fiscal consolidation and balanced budgets even when their economies are in *yin* phases, making a bad situation worse.

Moving beyond blind faith

Economic historians would do well to study the question of which policy mistake—profligate fiscal policy or a dogged insistence on balancing the budget, as seen in Depression-era Germany and the U.S.—has had more severe repercussions. Although this sort of examination is beyond the scope of this book, the likely outcome would be that no matter how large the budget deficit, the fallout from heavy spending is generally limited to higher interest rates and crowding out of private investment *as long as there is a strong and disciplined central bank*. Once the central bank bows to government pressure, and undertakes actions that cause it to lose the public's trust, tragedy awaits.

During the Reagan years in the U.S. and over the past fifteen years in Japan, proponents of fiscal consolidation warned almost incessantly that the nation was on the road to fiscal ruin.² In the end, of course, nothing of the sort happened. The reason is that central banks in both countries did not bow to government pressure, and steadfastly maintained policies deserving of the people's trust.

Still, many economists have spent the past fifteen years claiming with no real basis that Japan is on the brink of national bankruptcy, and demanding that the government rein in spending and raise taxes. At the same time, Paul Krugman and others have not only recommended the kind of drastic monetary accommodation that would make a central bank seem irresponsible in anyone's eyes, but have also insisted that the central bank *declare* its intention of acting irresponsibly. Such prescriptions totally ignore the lessons of history, which teach that only fiscal policy is effective during a *yin* phase, and that heavy fiscal stimulus will not lead to hyperinflation or other major problems as long as the central bank administers monetary policy responsibly.

Their misguided recommendations are based on two articles of blind faith. One is the prophecy of imminent fiscal ruin; the other, the belief that greater liquidity will everywhere and always boost the economy.

The latter article assumes that net private-sector loan demand is positive, as discussed in Chapter 1. The former, as noted in Chapter 4, has little theoretical support—readers will recall that the British economy did not collapse in 1945 despite a government debt amounting to 250 percent of GDP. Many pundits have been proclaiming for over a decade that Japan's large fiscal deficit will cause interest rates to surge. Instead, interest rates have *fallen* despite a steadily accumulating government debt for the simple reason that businesses were rushing to pay down debt even faster, and the resulting surplus of private-sector funds had no place to go except to the government, which was the last borrower standing.

The economics profession embraced the market's self-correcting powers until the Great Depression in the 1930s, the need for Keynesian fiscal policy until the 1970s, and the primacy of monetary policy until now. These wild gyrations and economists' susceptibility to fads are a reflection of their discipline's short history. Japan's recent experience, however, has shown that fiscal retrenchment and monetary policy will have the expected effect in a *yang* economy, but the opposite effect during a *yin* phase. Similarly, the active fiscal policy proposed by the Keynesians who once constituted the mainstream of economic thought will produce the expected effect in a *yin* economy, but the opposite effect during a *yang* phase. In that sense, Japan's recent experience is significant because it clearly demonstrates that neither monetary nor fiscal policy is in itself all-powerful.

3. What Keynes and the monetarists both missed

The negative legacy of the Keynesian revolution

We have established that the fundamental cause of both the Great Depression and Japan's Great Recession was a lack of borrowers and not a shortage of lenders. Adding the Bank of Japan to the list of lenders simply worsened an already serious overcrowding of lenders, with unfortunate consequences for the profitability of a banking sector that had been badly weakened by the massive fall in asset prices.³

Other economists who recognized the limitations described began saying the Bank of Japan should buy up everything from fighter planes to washing machines. Ben Bernanke even urged the bank to buy ketchup. But the authority to buy fighter planes and washing machines, which would affect the way the economy allocates its resources, lies not with the central bank but with the government itself, as a representative of the people. This power is called fiscal policy. The closer one examines the claims of these economists, the more evidence one finds that during a balance sheet recession, monetary policy is ineffective and fiscal policy effective.

On the other hand, the Japanese experience has also exposed serious flaws in the analytical framework of Keynes and his followers, who failed to consider balance sheets when formulating their theory. As did the monetarists and neoclassical economists, they overlooked the possibility that firms could be minimizing debt instead of maximizing profits. Keynes, who continued to assume that firms always maximize profits, had to argue that it was a decline in the marginal efficiency of capital that induced corporations to stop investing.⁴ But he never convincingly explained why the marginal efficiency of capital should suddenly fall.

Keynes also argued that monetary policy is ineffective at low interest rates because people shift out of bonds and into cash, expressing what he called the liquidity preference.⁵ But his concept is based entirely on a shift in the behavior of lenders. In other words, Keynes also overlooked the possibility that demand for funds could vanish when borrowers are faced with balance-sheet problems. As mentioned, no shift toward liquidity has been observed in Japan, even though short-term interest rates were brought down to zero under quantitative easing, and the yield on ten-year Japanese government bonds fell to 0.4 percent in 2003. Indeed the 0.4 percent yield on government bonds would have shocked Keynes, who argued that such low rates were highly unlikely.⁶

Furthermore, Keynes failed to explain why an economy and asset prices that until a short while before had been responding so well to monetary policy should suddenly cease to do so. As did the monetarists and neoclassical economists, he failed to see that the liquidity trap was a *borrowers'* phenomenon. Perhaps this

was because Keynes was himself a wealthy man, and had little experience with debt.

Even though Keynes got the solution to a balance sheet recession correct—deficit spending by the government—the logic he put forward was framed in terms of the multiplier and the marginal disutility of labor for the long-term unemployed.⁷ He was not arguing for deficit spending as an offset to corporate debt repayment.

His postwar followers, the Keynesians, had even less reason to worry about balance-sheet problems, because no economy experienced a balance sheet recession until Japan in 1990. As a result, the perspective of balance-sheet repair is conspicuously absent from the analyses of Keynes and his followers. In that sense, Keynesian theory as it stands is critically incomplete, because it fails to see corporate debt minimization as the key driving force behind the economic problem it has set out to explain and solve. Corporate debt minimization, therefore, is the long-overlooked micro-foundation of Keynesian macroeconomics.

The absence of this foundation has forced Keynesians to rely increasingly on wage and other rigidities to explain unemployment and recessions. The neoclassical economists also adopted the concept of price stickiness from the 1970s. They, too, struggled to make their theories conform more closely to reality, and their efforts to incorporate price rigidities came to be known as the New Keynesian school, which emerged at the start of the 1990s.⁸

When firms are minimizing debt, however, no wage or price rigidities are needed to produce prolonged recessions and unemployment, because the leakage from the income stream created by corporate debt repayment will continuously reduce aggregate demand until either corporate financial health is restored, or the private sector as a whole has become too poor to save any money.

Incorporating the balance sheet recession into the Keynesian analysis of aggregate demand makes it possible to explain why a robust economy suddenly stalls following a crash in asset prices, and what kind of mechanism is involved in the emergence of a liquidity trap. In effect, the Keynesian revolution becomes theoretically complete with the incorporation of Japan's experience with the Great Recession over the past fifteen years.

If Keynes had recognized balance-sheet concerns at firms and households as the main cause of the Great Depression, and had

indicated in 1936 that fiscal stimulus is effective and essential *only* when the private sector is paying down debt, his followers in the 1950s and 1960s would not have pushed for aggressive fiscal stimulus. That in turn would have preserved the credibility of deficit spending as the key policy tool for fighting a balance sheet recession all the way to the 1990s. Unfortunately, that is not how history unfolded, and precious time and energy were wasted in Japan and Germany attempting monetarist and structuralist remedies when the actual problem was to be found in balance sheets.

4. Toward a synthesis of economic theory

The possibility that otherwise healthy firms may minimize debt when faced with daunting balance-sheet problems has been the critical missing link in economics, and its absence has prevented the synthesis of many important macroeconomic ideas. Moreover, its absence has forced economists to rely on such gimmicks as price stickiness and downward rigidities of wage to explain longer-term recessions and unemployment.

By incorporating the possibility of corporate debt minimization and drawing a clear distinction between ordinary and balance sheet recessions, neoclassical, monetarist, Keynesian, and New Keynesian ideas can all be integrated into a truly comprehensive macroeconomic theory for the first time. In a normal or *yang* phase, in which businesses have healthy balance sheets and are maximizing profits, private-sector loan demand is robust and responsive to changes in interest rates. In this world, monetary policy should be the main tool for reducing fluctuations in economic activity. Fiscal stimulus should be avoided, because it leads to crowding out, inflation, and rising interest rates, and can interfere with the optimal allocation of resources. In the *yang* phase, upon which the theories of the neoclassicals, monetarists, and New Keynesians are all based, smaller government is better.

But every few decades, a nationwide asset-price bubble may develop. When the bubble bursts, corporate balance sheets sustain heavy damage, and firms move en masse to minimize debt. Demand for funds drops off sharply, and aggregate demand contracts, sending the economy into a deflationary spiral and generating a liquidity trap. In these circumstances, no amount of

central bank easing will provoke a response from the corporate sector. Furthermore, both the money supply and income come to depend on the sole remaining borrower—the government—and Keynesian fiscal stimulus becomes essential. During the *yin* phase, therefore, the bigger and more active the government, the better (at the very least, it must be large enough to fill the deflationary gap). Keynes, who wrote *The General Theory of Employment, Interest and Money* in the midst of the Great Depression, was trying to explain a *yin* world. Unfortunately, he was unable to free himself completely from the concepts of a *yang* world, and as a result, his theoretical edifice was unfinished. This is also why his theory was misapplied during the *yang* phase after 1945.

The clear symmetry between the world of profit maximization and debt minimization on the one hand and the effectiveness of monetary and fiscal policy on the other means that this is really a *dual* problem, and that the two phases should have been studied as a pair from the very beginning of macroeconomics. Corporate debt minimization was not just the micro-foundation of Keynesian economics, but the long-overlooked “other half” of macroeconomics. With the two finally together, we now have a complete “general theory” covering both the textbook world and the world of balance sheet recessions. The two halves are summarized in Exhibit 5-3.

Until now, corporate profit maximization and debt minimization have never been recognized as a dual problem, because the latter can be observed only after the bursting of a nationwide asset-price bubble. Nationwide asset-price bubbles occur only rarely. Japan’s Heisei bubble and its aftermath, the Great Recession, however, have finally brought the two parts of the problem together for all to see.

Immediately after Keynes published his *General Theory*, Hicks devised the technique of IS–LM analysis as a means of incorporating Keynes’s theories into the conventional economic framework. Hicks’s model however, was able to explain long-term recessions only by using a flat LM curve and wage rigidities.⁹ In contrast, the *yin–yang* economic cycle, by incorporating a concept overlooked until now, not only explains long-term recessions without relying on these gimmicks, but also offers a basis for incorporating various separately developed theories within a single framework.

Exhibit 5-3. A new “general theory” of macroeconomics

	<i>Yang</i>	<i>Yin</i>
1) Phenomenon	Textbook economy	Balance sheet recession
2) Fundamental driver	Adam Smith's “invisible hand”	Fallacy of composition
3) Corporate financial condition	Assets > Liabilities	Assets < Liabilities
4) Behavioral principle	Profit maximization	Debt minimization
5) Outcome	Greatest good for greatest number	Depression if left unattended
6) Monetary policy	Effective	Ineffective (liquidity trap)
7) Fiscal policy	Counterproductive (crowding-out)	Effective
8) Prices	Inflation	Deflation
9) Interest rates	Normal	Very low
10) Savings	Virtue	Vice (paradox of thrift)
11) Remedy for Banking Crisis*	“Fat spread” and quick disposal of NPLs	Capital injection and cautious disposal of NPLs

*This point is explained in detail in Chapter 7.

Source: Compiled by Nomura Research Institute based on Eizo Kinoshita, *Keizai wo shihai suru futatsu no housoku*, Denki Shoin, p. 92.

In the end, two balance sheet recessions—the Great Depression and Japan's Great Recession—made possible this macroeconomic synthesis. This synthesis of economic theories may well be the Holy Grail of macroeconomics we have been looking for since the 1930s. In simplest possible terms, the Grail tells us to determine which phase the economy is in, and implement policies that are appropriate for the phase. If the economy is in a *yin* phase, the appropriate measures include seamless spending-

based medium-term fiscal stimulus combined with a program of capital injection for the banking system. If the economy is in a *yang* phase, the appropriate measures include monetary policy easing coupled with a “fat spread” (explained in Chapter 7) to repair the banking system.

If and when it is accepted by the profession, this synthesis will have major implications for future economic analysis. In particular, the next time a country experiences a recession that proves unresponsive to monetary easing, economists equipped with the balance sheet recession concept will quickly consider the possibility that businesses have shifted from profit maximization to debt minimization. The first indicator they should look at will be the level of interest rates, including those of government bonds. A low government-bond yield in the face of bankers who are eager to lend (such as those shown in Exhibit 2-3) is a sure sign that there will be no private-sector borrowers to take up funds left unborrowed by the government if it went ahead with fiscal consolidation. In this situation, not only is fiscal consolidation out of the question, but a large fiscal stimulus may be needed to turn the economy around.

Two critical decisions in 2003

From this point of view, two decisions made in 2003, one in Japan and the other in Europe, were both very much in line with the need to fight balance sheet recessions in those economies.

The two decisions were the removal of the self-imposed ¥30 trillion annual limit on the issuance of Japanese government bonds by Prime Minister Junichiro Koizumi and the decision by the EU's Economic and Financial Affairs Council (ECOFIN) not to punish France and Germany for violating the Maastricht limit on budget deficits. Because these economies were facing serious balance sheet recessions, action to allow greater flexibility in fiscal policy was urgently needed. As the disastrous experience of Prime Minister Hashimoto's effort to reduce the budget deficit in 1997 amply demonstrated, a premature attempt to rein in the deficit during a balance sheet recession will only harm the economy and increase the deficit.

Indeed, Prime Minister Koizumi's decision to scuttle the self-imposed limit, and allow fiscal policy to play the role of automatic

stabilizer contributed in no small way to the recent upturn. He would have done even better if he had explained to the public that a fiscal stimulus was needed not because the economy was weak, but rather because the government had to counter the fallacy of composition problems arising from so many Japanese companies paying down debt at the same time.

Similarly, ECOFIN should have stated that the Maastricht limits were suspended for Germany and France not because of economic weakness, but because the two economies had contracted that rare economic disease called a balance sheet recession. By drawing the distinction between ordinary and balance sheet recessions, and restricting the use of fiscal stimulus to the latter case only, ECOFIN could have reduced the chance of indiscriminate use of fiscal stimulation by member countries in the future, the kind of abuse that once destroyed Keynes's credibility, and could one day destroy the euro's credibility.

Finally, ECOFIN and the Japanese government also should have mentioned that the headwinds their economies faced were the same as those experienced when many nations fell into a deflationary spiral in the 1930s.

Of course, recessions seldom fall entirely into one category or the other: they usually contain elements of both. In an ideal world, the mix of fiscal and monetary policies should be determined by the degree to which the recession is brought about by balance-sheet or cyclical factors. Unfortunately, that firms with balance-sheet problems typically hide them from the public complicates a precise determination.

One can still get some idea of the key driver of a recession, however, by observing private-sector fund demand and interest rates. If the economy is in a normal, or *yang*, world, a normal level of interest rates will be accompanied by robust fund demand, with the latter responding quickly to changes in the former (Exhibit 5-3). If the economy is in a balance sheet recession, or *yin*, world, exceptionally low interest rates will be accompanied by very weak fund demand, and the latter will hardly respond to changes in the former.

In the former case, in which the economic bottleneck is on the lenders' side, the central bank can and must ease the constraint by lowering interest rates and adding liquidity. In the latter case, in which the bottleneck is with the borrowers, many of whom

are minimizing debt, only the government can return the excess savings to the income stream.

Japan's story must be told in preparation for the next bubble

Every several decades, when a nationwide asset-price bubble develops and eventually bursts, firms are forced to shift their focus from profit maximization to debt minimization. The balance sheet recession theory provides a theoretical basis for understanding economic developments during this special phase. It does not reject the applicability of conventional economics in the *yang* phase, but rather supplements it in the *yin* phase that has been overlooked by earlier theorists. The present theory also represents a return to the origins of macroeconomics in the sense that recent developments in the profession have become excessively dependent on the concept of price and wage rigidities.

Asset-price bubbles will happen again. It may be decades before we see another one as large as Japan's in the late 1980s, but the nation has already experienced a smaller but similar IT bubble. Larger asset-price bubbles have occurred elsewhere—witness the U.S. housing and Chinese stock market/real estate bubbles. When these bubbles eventually burst, it is comforting to know that Japan's recent experience has clearly demonstrated what sort of policy is required to deal with their aftermath.

Even if the bursting of a bubble destroys national wealth equivalent to many years of GDP, and prompts the private sector to begin paying down debt, Japan has shown that it is possible to maintain GDP at bubble-peak levels as long as the government engages in timely fiscal stimulus to fill the deflationary gap, and propping up aggregate demand and money supply in this manner will enable businesses and households to repair their balance sheets sooner than would otherwise be possible.

The Japanese government responded to the recession with a reasonable amount of fiscal stimulus, and, with the exception of 1997 and 2001, generally chose the right path. Still, if the balance sheet recession theory had already been accepted by the economics profession before the bubble's collapse in the early 1990s, Japan would have recovered from the recession sooner, more easily, and at less cost. (If it were not for the policy failures

of 1997 and 2001, the cumulative fiscal deficit would have been at least ¥100 trillion less than it was.)

Of course, much work remains before this theory can play a meaningful role in practical policymaking. Issues requiring further study include how to estimate the required fiscal stimulus when preparing the budget, how outsiders are to observe balance-sheet damage that businesses would prefer to keep hidden, and how to determine what constitutes a “clean balance sheet” in the minds of corporate executives, and how long they expect the repair process to take.

In this sense, I sincerely welcome the participation of other Japanese and foreign economists in refining the theory to enable it to play a policy-leading role. We in Japan have been given an extremely valuable opportunity by virtue of working amidst corporate managers who experienced (and survived) a balance sheet recession. I believe the economists who witnessed Japan's long recession and the pain endured by the nation have an obligation to understand the concerns and behavior of those managers, and to find a way to incorporate this knowledge into the body of economic thought. If diligently pursued, these efforts will forge a lasting legacy from the concepts of the *yin* economy and the balance sheet recession, which were born out of Japan's painful experience.

Coda: Fisher's debt deflation and the balance sheet recession¹⁰

It has been argued that Keynes got the remedy for balance sheet recessions right, but not their cause. At the opposite extreme stands Irving Fisher, who came up with the concept of debt deflation in 1933.¹¹ He correctly identified some of the reasons behind these recessions, but not the remedy. Because many readers of economic literature may be wondering how the balance sheet recession concept differs from Fisher's debt-deflation argument, a short comparison is offered here.

As does a balance sheet recession, Fisher's debt deflation starts with a state of overindebtedness that leads people to liquidate debt. From there, Fisher argues, there are nine steps that lead to debt deflation:

(1) *Debt liquidation* leads to *distress selling* and to (2) *a contraction of deposit currency*, as bank loans are paid off, and to a slowing of the velocity of circulation. This contraction of deposits and their velocity, precipitated by distress selling, causes (3) *a fall in the level of prices*—in other words, a swelling of the dollar. Assuming that this fall in prices is not interfered with by reflation or otherwise, there must be (4) *a still greater fall in the net worth of businesses*, precipitating bankruptcies and (5) *a like fall in profits*, which in a “capitalistic,” that is, a private-profit, society, leads concerns that are running at a loss to (6) *reduce output, trade, and employment*. These losses, bankruptcies, and unemployment lead to (7) *pessimism and a loss of confidence*, which in turn result in (8) *hoarding and a further reduction in the velocity of circulation*. The above eight changes cause (9) *complicated disturbances in interest rates*—specifically, a fall in nominal, or money, rates and a rise in real, or commodity, rates of interest.¹²

Although this idea contains many items that are also found in the balance sheet recession theory, the associated causality is entirely different. First, as Fisher himself states on numerous occasions, deflation is the key driver of this concept; without it, the economy would only suffer a “far milder and far more regular” cycle. To generate deflation, therefore, Fisher gives distress selling a very prominent role in both item (1) and item (2). Furthermore, items (1) to (5) are all about price levels and monetary changes; there is no change in the real economy. In Fisher’s model, the output declines come toward the end (item 6) of the process.

In a balance sheet recession, however, deflation is very much a result, and not a cause, of recession. The key driver of this kind of recession is the fall in asset prices that forces businesses to shift from profit maximization to debt minimization to repair their balance sheets. Here the output declines come first, because the corporate sector has not only stopped borrowing and spending household savings, but also has begun redirecting their cash flow to debt repayment. Real demand drops by an amount equal to the sum of household-sector savings and corporate debt repayment (i.e. the amount of funds that enter the banking system but cannot leave it due to a lack of borrowers), the economy slumps, and prices—including asset prices—fall. This drop in asset prices sparks a vicious cycle by redoubling the urgency of company efforts to reduce debt. The driving force behind a balance sheet

recession is therefore a shift in the focus of businesses from profit maximization to debt minimization, which not only initiates a spiral of declining aggregate demand, but also leaves the economy unresponsive to changes in interest rates.

Although both concepts start with debt liquidation, Fisher's argument is very much driven by a fall in prices, with corporate distress selling playing the key role, whereas a balance sheet recession is driven by a fall in corporate borrowing relative to household savings.

For Fisher's process to work continuously, however, prices must fall faster than the pace of debt repayment, so that debt in real terms continues to mount (item 4). For deflation to increase a company's real debt load when the company has reduced its nominal debt by 10 percent, for example, prices must fall by more than 10 percent.

Although prices can fall quickly in the markets for agricultural products and other commodities, a huge and continuous volume of distress selling would be required for the overall price level to fall so fast in an industrialized economy. This is a highly unrealistic assumption. Fisher's debt deflation will therefore stop soon without a substantial amount of deflation to start with.

In contrast, no distress selling or rapid fall in output prices is needed to trigger a balance sheet recession. All it takes is a large fall in asset prices (i.e. the bursting of a bubble) that prompts the corporate sector to shift from profit maximization to debt minimization. Consequently, it is much more likely to happen than Fisher's debt deflation.

Moreover, Fisher attempts to generate deflation by combining debt repayment and distress selling. Although debt repayment was observed during Japan's long recession, distress selling was not. Nor was there any reason it should have been. Japanese corporations, and particularly the exporters, were doing fine as far as their main lines of business and cash flows were concerned; only their balance sheets were problematic. Any deflation that was observed was a result of the fall in aggregate demand brought about by corporate debt repayment, and the magnitude of deflation was also extremely limited as noted in Chapter 4. In other words, the resulting deflationary pressures were insufficient to produce a sustained increase in firm's real debt load.

More importantly, because Fisher focused almost exclusively on monetary contraction and falling prices as the key drivers of

debt deflation, his remedy is also entirely monetary in nature: he recommends that the central bank reflate. This is where his argument runs into massive contradictions.

He has already argued that people are liquidating debt (in item 1), and that this liquidation is causing the money supply to shrink (in item 2). If that is the case, the money multiplier will be negative at margin and no amount of liquidity injection by the central bank will boost the money supply and reflate the economy. As Chapter 3 demonstrated, private- or public-sector borrowers are needed to increase the money supply. Because Fisher is openly against the government moving “to float, or trying to float, more loans,”¹³ the central bank will not be able to reflate the economy at all in the absence of both private- and public-sector borrowers. That is precisely the lesson of the 1930s.

When deflation is caused by a nationwide move by firms to repair their balance sheets, the problem will not be solved until most of them have succeeded. For that to happen, the government must provide fiscal stimulus to keep the economy afloat and ensure that firms have the revenues needed to pay down debt.

As noted in Chapter 3, there are at least two types of recession and deflation: those that are primarily caused by a change in lender behavior, and those that are primarily caused by a change in borrower behavior. Both the Great Depression and Japan’s Great Recession were brought about by a change in borrower behavior, and Fisher’s debt deflation is also driven by the borrowers paying down debt. But when borrowers are no longer borrowing, even at zero interest rates, monetary policy is largely irrelevant.

Even though Fisher’s debt-deflation argument is interesting, the exclusive emphasis on distress selling and a rapid fall in prices as the drivers of debt deflation makes his theory unrealistic. Even if this debt deflation actually materialized, Fisher’s conclusion that the central bank could save the economy with reflation is totally at odds with both the real world and his own theory. The central bank cannot reflate the economy when essentially everybody is paying down debt.

Orthodox economists have started from the assumption that deflation is always a monetary (i.e. a lender) phenomenon, and then blamed the Bank of Japan, which is ultimately responsible for the supply of funds to the economy.¹⁴ But Japan’s deflation, as was that of the Great Depression, was neither a monetary phenomenon nor the kind that could be fixed by a central bank.

Policymakers facing deflation therefore, must first determine what kind of deflation they are dealing with before devising measures to fight it. Those assuming that deflation is always a monetary phenomenon are completely overlooking the possibility that the economy could be in the *yin* phase.

ENDNOTES

1. Robinson (1972), p. 8.
2. For example, see Figgie and Swanson (1992).
3. Koo (2003a) discusses this point in detail in Chapters 6–8.
4. Keynes (1936), p. 136.
5. *Ibid.*, p. 207.
6. *Ibid.*
7. *Ibid.*, p. 128.
8. Mankiw and Romer (1991), p. 2.
9. See Koo (2003a), pp. 112–14 for more details.
10. This coda contains much of the same material as Koo (2003c), pp. 213–18.
11. Fisher (1933).
12. *Ibid.*, p. 342.
13. *Ibid.*, p. 347.
14. For example, see comments from Hiroshi Watanabe, director-general of the Ministry of Finance's International Bureau, as reported by Reuters on January 22, 2003.

Pressure of Globalization

1. The need for *real* reforms in Japan and other developed countries

Chapters 1 and 2 argued that structural reform was neither a necessary nor a sufficient condition for Japan's economic recovery from the Great Recession. That is not to suggest that no reform is necessary. On the contrary, the pressure of globalization mentioned at the beginning of Chapter 1 is forcing Japan and the rest of the developed world to make massive changes to its economy and society.

Today, we have a situation in Japan in which large corporations, especially those with global reach, are doing very well, while many small businesses and households are just surviving. Geographical disparities have also emerged. Whereas the urban areas such as Tokyo and Nagoya where the large corporations are concentrated are in the bloom of health, local economies dominated by smaller businesses are at the verge of capitulation.

These economic disparities have led to the growing social disparities that are now attracting much media attention in Japan. At their root is the economic phenomenon of globalization, and particularly the emergence of China and India.

China alone added to the global economy a supply of labor equivalent to that of all the industrialized nations combined. That

increased the return on capital (including Japanese and other foreign capital) able to take advantage of this labor, but at the same time it reduced the return on foreign labor competing with Chinese workers.

That, in turn, contributed to the disparities noted. Indeed, globalization is splitting societies in all countries, with those who can take advantage of it on one side, and those who cannot on the other.

Japan's emergence also forced major adjustments in Western economies

While in theory the emergence of China and India should have had a similar impact on all the industrialized economies, reactions have varied greatly, with Japan particularly hard hit, in my view. This is because the industrialized nations of the West underwent a similar ordeal, starting in the mid-1960s, when Japan's rise as an economic power forced major adjustments in their industrial structures.

At the time, Japan's emergence came as a tremendous shock to many Western nations. The German camera industry, for example, which for many decades had been the indisputable world leader, was almost wiped out by Japanese competitors in just a decade from 1965–75.

Similarly, many U.S. manufacturers of home appliances and machine tools were driven out of business by Japanese companies. That came as a tremendous shock to those industries, which until 1965 or so believed themselves to be without rivals.

This shift in industrial supremacy, coupled with defeat in the Vietnam War, sapped U.S. confidence, and it would take the nation nearly twenty years to get it back. Throughout this period, books such as Ezra Vogel's *Japan as No. 1* and business-school classes on Japanese management techniques were all the rage.

Japan now stands in shoes of the U.S. in the 1970s

In contrast to the West, which has the experience of being chased by the Japanese, this is the first time Japan has been chased, and the Japanese system is totally unprepared for the challenge. In the six decades since World War II, Japanese society has been

structured around the goal of catching up and overtaking the West. Everything from corporate wage structures to the education system was designed to achieve this objective. For schools, this meant providing a supply of uniform, high-quality labor by cramming students' heads with knowledge; for companies, it led to the adoption of the seniority system and lifetime employment. These were extremely efficient systems for a nation with a clearly defined goal that could be achieved quickly only if everyone worked together as one. Japan successfully overtook the West in many fields, housing conditions and roads excepted. In other words, the Japanese system has never been structured to fend off a pursuer coming up from behind.

Convinced of its newfound superiority, Japan was soon sucked into an asset-price bubble, and saw its economic power weaken dramatically in the ensuing Great Recession, which lasted for fifteen years. The bursting of the Japanese bubble coincided with the end of the Cold War, and while Japan struggled with balance sheet recession, China made huge steps forward, which enabled it to compete with Japan and other industrialized economies in many fields.

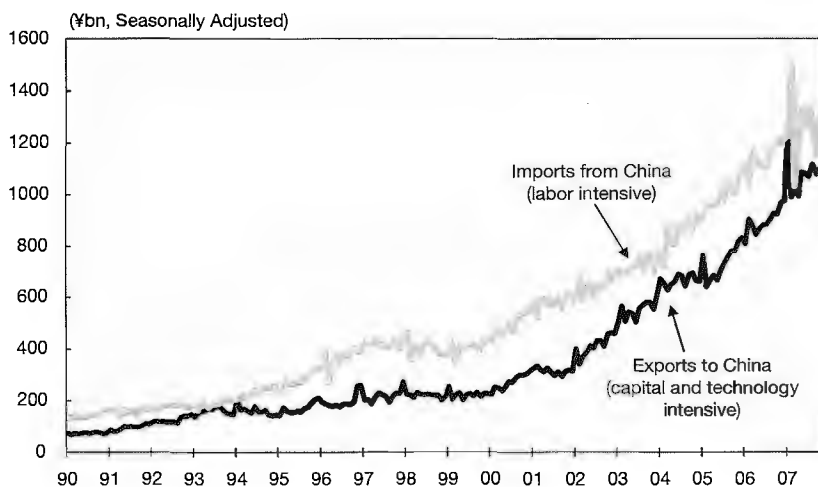
As a result, Japan now finds itself in the same position as the U.S. in the 1970s. Many manufacturing jobs have already shifted to China, and Japan has been running a trade deficit with China continuously since 1994 (Exhibit 6-1).

One reason more people in the West and Japan are not aware of China's ascendancy as an economic power, unlike Japan's in the 1970s, is that most of the exported products manufactured in China are made by Western, Japanese, or Taiwanese companies, or produced under original equipment manufacturer agreements.

This is the result of China's decision to accept foreign direct investment by non-Chinese corporations. It stands in sharp contrast to Japan, which placed heavy restrictions on foreign investment, and exported to Western markets under Japanese brand names.

While Chinese company names having remained largely hidden from view has helped to avert trade frictions, it has done nothing to diminish the threat represented by these products to workers in the industrialized nations.

Even if trade between Japan and China is balanced, demand for Japanese labor will decline because Japan's exports are technology intensive and its imports from China are labor intensive.

Exhibit 6-1. Japan's imports from China continue to rise

Notes: These data are seasonally adjusted by Nomura Research Institute.

Source: Ministry of Finance, *Trade Statistics*.

Suppose that Japan and China each exported ¥5 million worth of goods to each other. In Japan, that sum represents one worker's annual wages, whereas in China it is sufficient to pay more than ten workers for a year. In effect, Japan has just imported at least nine Chinese jobs.

The same phenomenon was observed in the West in the 1970s. While Japanese workers saw their incomes rise as they worked more, their counterparts in the West found themselves sparsely rewarded no matter how much they worked.

Western nations responded to Japan's challenge in two ways

This brings up the issue of how Western nations responded to Japan's challenge in the 1970s. While there was a great deal of trial and error, including some moves toward protectionism, ultimately there were two main responses. Imports were liberalized, producing substantial reductions in the cost of living, and governments provided active support for people capable of doing new things and driving economic growth.

Specifically, people able to come up with new products, services, and designs were given ample opportunities, starting

from the educational process, while those without these abilities were assisted through a lower cost of living, enabling them to get by on a moderate income.

As a result of this process, those capable of generating new added value became very wealthy, while the rest experienced stagnant standards of living and real wages.

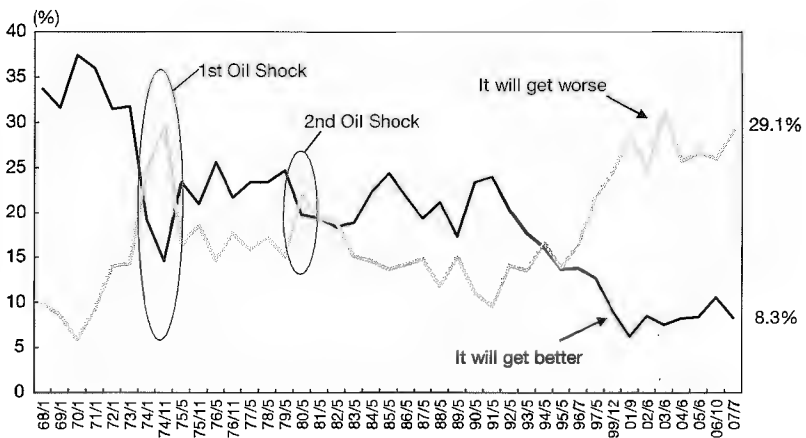
It has been estimated that despite an extended period of favorable economic conditions that lasted until 2007 in the U.S., as many as 70 percent to 80 percent of all workers have seen no increase in their real wages since the 1990s. In other words, only 20 percent to 30 percent of the population have benefited from the long boom.

Pessimists far outnumber optimists in Japan

The situation in Japan is similar. The Cabinet Office has been conducting its Opinion Survey on Living Standards since the 1960s, and until 1995 the percentage of people responding that they expected their lives to get better was almost always greater than the number who expected things to worsen. Since 1996, however, the situation has reversed, and pessimists now outnumber optimists by 29.1 percent to 8.3 percent (Exhibit 6-2).

Exhibit 6-2. Japanese remain concerned about their standard of living

Question: "What do you think will happen to your living standards in the future?"



Source: Cabinet Office, Japan, (2007), *Opinion Survey on Living Standards* (Jul. 2007)

Although this pessimism was understandable between 1995 and 2003, when Japan fell steadily deeper into a balance sheet recession, it is worrying that it remains there even after the stock market has more than doubled since hitting its bottom in 2003 and both employment and land prices are improving. If the balance sheet recession were the only cause of this pessimism, the ratio of optimists to pessimists should be heading toward the levels of the early 1990s. As yet, however, there are no signs of it doing so.

This suggests that although Japan finally overcame the balance sheet recession, it now faces a new and entirely different problem—the growing number of Japanese workers who, because of China's emergence, are no longer being rewarded for hard work alone. As long as nearly 30 percent of the population expect their lives to get worse, and fewer than 10 percent expect them to get better, it is also difficult to hope for a strong recovery in domestic consumption.

Pessimism came to a boil in July 2007 upper house election

In short, Japan faces a situation in which large companies with global operations and the urban areas in which these firms tend to be based continue to enjoy favorable economic conditions, but their success no longer trickles down to small businesses in local areas. Instead the benefits are flowing to China and other overseas production bases.

Furthermore, Japan's media organizations and policy-making bodies are all concentrated in Tokyo, where the economy is strong, posh restaurants are springing up all over the city, and contractors are rushing to put up new buildings as part of urban-redevelopment projects. Residents in metropolitan areas therefore have a tendency to view public-works investment in the countryside and other economic stimulus measures as nothing more than wasteful government spending.

With politicians conscious of Tokyo-based media, people in rural areas became increasingly desperate. This sense of desperation led 29.1 percent of all respondents in the Cabinet Office survey to say they were pessimistic about the future.

For better or for worse, rural votes still carry a lot of weight because there has been little progress in the Diet's efforts to correct the imbalance of representation between urban and rural districts.

That was convincingly demonstrated when rural discontent boiled over in the July 2007 upper house election, in which the ruling LDP was dealt a devastating defeat. The election made it clear that politicians cannot win re-election if they listen only to the Tokyo-based media. Looking ahead, the ruling party's response to the growing domestic disparities triggered by globalization will be a focal point in forecasts of Japan's politics and economy.

If things keep moving in the current direction, companies and individuals who can take advantage of globalization, and draw on Chinese and Indian strengths will continue to prosper. The shares of these companies and incomes of these individuals may well rise substantially. On the other hand, small-and-medium-sized companies dependent on domestic demand, together with many individuals, will be unable to benefit. They may instead face increasingly difficult circumstances as businesses shift production facilities overseas.

This means the gap between globally active large-and-medium-sized enterprises on one hand, and small businesses and individuals on the other, will widen further in the years to come. Viewed from another angle, large corporations with global reach will continue to enjoy tremendous growth even as the broader Japanese economy stagnates.

Monetary and fiscal policy cannot ease pain of globalization

In this new world of globalization, it is unreasonable to expect monetary policy to save the day. The problems involved are far too large to be managed with a minor adjustment to interest rates. Those large companies with both the human and physical capital to take advantage of globalization will be hungry for funds, but the uncertain outlook will leave other businesses reluctant to borrow, thereby delaying the overall recovery in demand for funds. As long as the current economic environment continues, interest rates will probably stay low.

Fiscal policy, which was the essential policy tool for dealing with the balance sheet recession, is likely to be little more than a painkiller unless applied prudently. By "prudently," I mean using fiscal policy to upgrade the education system and build the research and development capabilities necessary for the country to maintain its technological lead.

In fighting the balance sheet recession, how the government spends money was of secondary importance. Indeed, history is full of examples of military spending, which increases demand without increasing supply, being the most efficient¹ way out of balance sheet recession. In responding to the challenges of globalization, however, how the government spends money becomes critical in maintaining the country's international competitiveness.

Needed: shift in educational approach

A glance at the (Tokyo-centric) media reveals no sense of crisis or fear that Japan may find itself in the same situation as the U.S. in the 1970s. Still, the surveys noted suggest that many individuals and small businesses are already feeling this crisis directly.

Even if this view became more prominent, there would probably still be a divergence of opinion on how the nation should respond. Some would doubtless recommend protectionist policies or a devaluation of the yen, even if such measures are not practical.

On the educational front, some are already arguing that we need to send children to school on Saturdays again and make them study more. But the kind of people that Japan needs now are those able to create new products and services to stay ahead of the Chinese challenge. They are of a completely different breed from the "uniform, high-quality" workers Japan once required.

People with uniform, homogeneous knowledge and worldviews, the so-called mainstream types, cannot be expected to come up with too many new ideas. What Japan needs today is not uniformity, but rather people who are able to develop new products and markets by constantly challenging authority and the accepted wisdom.

The Western liberal arts education has a long tradition of prizing people who think differently from the rest. Japan, on the other hand, will need to work hard to change its strong conformist mentality.

Another major issue will be how to reduce the cost of living for the majority of people whose real incomes will not rise. The growth of so-called one-hundred-yen shops, which sell everything from electronic calculators to household wares, has done wonders to bring certain costs down, but much more is needed, especially

in the areas of housing and food costs. If the nation charges ahead with globalization despite a still-high cost of living, the results could be tragic.

Real structural reforms are yet to come

In light of the preceding, it will take a great deal of time and effort for Japan to completely overcome the challenges of globalization. Just as the balance sheet recession required a new and utterly different response, globalization and the widening social gap it has spawned will require a major change in thinking.

Having finally managed to raise its head above water after a fifteen-year recession, Japan now faces a second large wave in the form of China and globalization. This second large wave may easily take a decade to overcome. This is truly a case of jumping “out of the frying pan and into the fire.”

In the past few years, politicians and media representatives have made an uproar about superficial reforms that will have little impact on most people, such as the privatization of the post office and public-highway operators, while until quite recently, they almost totally ignored the growing social gap and struggling local economies. The wave of globalization will force major changes on a country that until now has devoted its resources to catching up with the West. In that sense, the structural reforms that Japan truly needs are yet to come.

2. Global imbalances and liberalization of capital flows

IMF issues warning about trade imbalances

Another globalization issue that is haunting Japan and the rest of the world is the widening of global trade imbalances brought about by simultaneous opening of financial markets in all major countries.

Between late April and early May 2006, the world's three most important economic policymakers—the G7, the OECD, and the IMF—issued almost simultaneous warnings about global trade imbalances. The G7 normally releases a one-page statement

after the meetings. This time the statement was two pages long, with the entire second page devoted to global imbalances. The OECD² and IMF also issued strong warnings.

“Global imbalances” here refers mostly to the U.S. trade deficit. In effect, the three organizations were saying that the U.S. trade deficit was already at an unsustainable level, and that global policymakers needed to do whatever was necessary to bring about an orderly resolution of the problem before it led to a destructive event such as a dollar collapse.

Of the three bodies, it was the IMF that spoke most frankly about the problem and how to solve it. The IMF wrote, “an orderly resolution of global imbalances will require measures to facilitate a rebalancing of demand across countries and a realignment of exchange rates over the medium term, with the U.S. dollar needing to depreciate significantly from current levels, and currencies in surplus countries—including in parts of Asia and among oil producers—to appreciate.”³

The IMF is seldom able to speak so straightforwardly. Written materials produced by international bodies tend to be rather dull, because they are based on the consensus of all members, and determined opposition from one member country often leads to the removal or toning down of strongly worded passages. So everyone was surprised when the IMF effectively demanded a substantial devaluation of the dollar—after all, such statements can have a tremendous impact on markets and economies. Indeed, both the dollar and stock markets around the world fell substantially following these announcements.

Demise of the U.S.-dependent growth formula

Simply stated, we have reached the point where something must be done about global trade imbalances. The U.S. has driven global economic growth for the past several decades, but it cannot continue to rack up the massive trade deficits it is running now. This signals a fundamental change in the global economic environment that we—and particularly Japan and other Asian economies—have come to take for granted.

Asia's formula for economic growth was pioneered by Japan in the 1950s. The formula was simple: make good products, sell them to the U.S., and get rich. The strategy involved putting aside thorny political, military, and diplomatic issues (or allowing

them to be decided by the U.S.) and devoting national resources to making high-quality products to sell to the U.S. As long as Americans bought them, exports rose, and the resulting income could be reinvested in new technology and machinery, further adding to growth and GDP. Japan put this strategy into practice in the late 1950s, and soon embarked on a period of rapid economic growth.

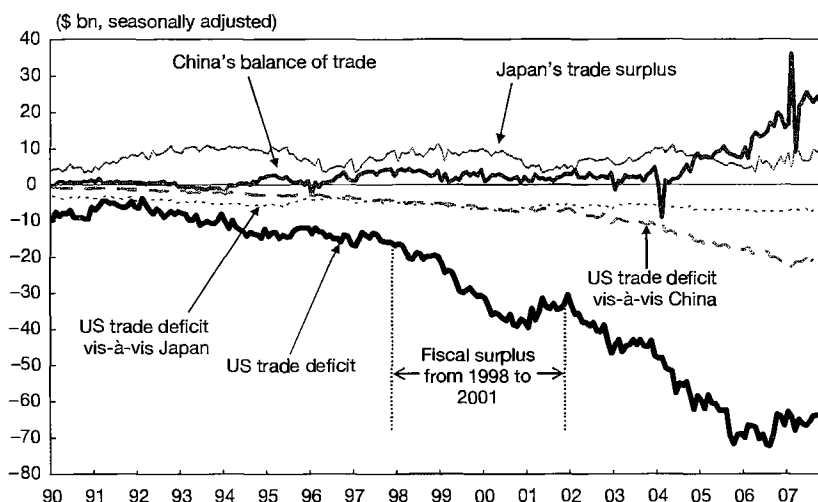
Taiwan and Korea were struggling with a variety of domestic political problems at the time. However, they soon realized that while they were preoccupied with these issues, Japan had pulled far ahead in the economic arena. As the living standards in both Taiwan and Korea were not too far behind those of Japan before 1945, the gap that developed between Japan and those two nations in the 1950s and 1960s did not bode well for their leadership. Deciding that this was unacceptable, both nations chose to set aside their complex political problems until later, and follow Japan's lead, with similar results. They were soon followed by Hong Kong, Singapore, Thailand, Malaysia, and ultimately China. Although this strategy generated dramatic economic growth for all of Asia, it also meant large and growing trade and current account deficits for the U.S.

The U.S. trade and fiscal deficits are almost entirely unrelated

The U.S. is running a massive current account deficit. Typically, the IMF issues a warning once a nation's deficit exceeds 3 percent of GDP and a much more severe warning at 5–6 percent. The first resembles a yellow card in soccer, the second a red card. The U.S. deficit peaked at nearly 7 percent of GDP, placing it in extremely dangerous territory (Exhibit 6-3). This is why the IMF, OECD, and G7 issued the warnings they did.

Many countries that export to the U.S. blithely argue that the U.S. trade deficit is a matter of the so-called twin deficits, and that solving it will require that the U.S. reduce its fiscal deficit. But that a country has both a trade deficit and a fiscal deficit does not mean the two are necessarily linked.

Between 1998 and 2001, a period in which the U.S. ran a fiscal *surplus* equal to 2–3 percent of GDP, the trade deficit almost doubled (Exhibit 6-3). In other words, it was impossible to argue that the trade deficit was caused by the fiscal deficit.

Exhibit 6-3. U.S. trade deficit is still huge

Note: U.S. trade deficit figures from Bureau of the Census. Seasonal adjustments performed by NRI.

Source: Government of Japan, Ministry of Finance; U.S. Department of Commerce, Bureau of the Census; China Customs.

In January 2005, the Fed published research analyzing the relationship between the fiscal and trade deficits.⁴ The authors of this paper used an econometric model to estimate the impact of the former on the latter. They concluded that a \$5 decrease in the fiscal deficit would produce only a \$1 improvement in the trade deficit. In other words, if the two deficits are of the same magnitude, four-fifths of the trade deficit is determined by factors other than the fiscal deficit.

The remaining “four-fifths” of the deficit is driven largely by two factors: the growth-rate differential between the U.S. and other countries, and the U.S.-dollar exchange rate.

Regarding the first, U.S. growth was far more robust than that of Japan or Europe over the past few years. It is quite possible that this disparity drove the expansion of the U.S. trade deficit.

The question, however, is whether reducing the U.S. growth rate would actually solve the problem. The reduction would probably have a short-term impact, because a weaker economy would mean a smaller appetite for imports. But the U.S. trade deficit has been growing for more than ten years, and needs a

long-term solution: inducing a semi-permanent recession solely for the purpose of reducing the trade deficit would be politically unfeasible.

The only option left, then, is an adjustment of the exchange rate. This is the conclusion that led the IMF to issue the statement quoted.

U.S. authorities' views on the dollar and capital inflows have changed greatly

The need to bring the dollar down invariably elicits the response that the U.S. has a massive trade deficit and is dependent on capital inflows from overseas, and that a decline of the dollar could prompt Japanese and Chinese investors to sell their dollar holdings, causing U.S. interest rates to soar. This way of framing the issue suggests that because there is a trade deficit, the U.S. needs to attract capital inflows. According to this argument, Washington must be careful with the dollar to keep Japan and China, the two nations providing the bulk of capital inflows to the U.S., happy.

This way of looking at the world was largely valid in the period before 1980, when capital flows largely followed trade flows. Starting in about 1980, however, extensive opening of capital markets in all the major economies reversed the causality in many situations. Now, too often capital flows are producing destabilizing trade flows. Moreover, today's massive cross-border capital flows are not only amplifying global trade imbalances, but also making it difficult for individual countries to administer monetary policy. To make matters worse, there are no guidelines in economics literature for dealing with these flows, because this is the first time in history that capital flows have been freed to this extent. The world is indeed entering uncharted waters in terms of the relationship between capital and trade flows.

Carry trades undermining central bank policies

Previous Chapters have shown that monetary policy is largely irrelevant in fighting a balance sheet recession. But that does not mean that monetary policy in Japan is of no interest. Quite the contrary, monetary policy moves by the Bank of Japan are now

one of the most closely watched events in financial markets and monetary policy circles around the world.

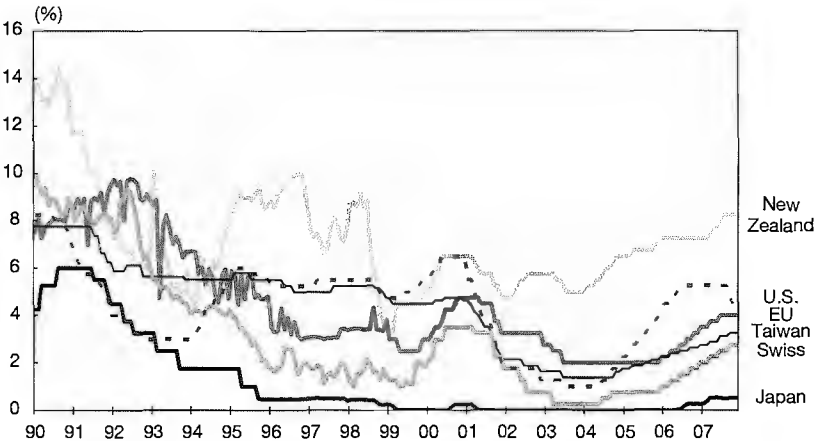
For many global investors today, the Bank of Japan's actions are probably as important as those of the Fed or the ECB. This focus on the Bank of Japan stems from the fact that so much global investment activity today is financed in yen, the currency offering the lowest interest rates (Exhibit 6-4).

In what is known as the yen-carry trade, investors and even ordinary homebuyers around the world are borrowing in yen, and exchanging those yen for the currency they need to make their final purchases. So Croatian or Spanish homebuyers borrow in yen, sell the yen in the foreign-exchange market for Croatian kuna or euros, and use those currencies to purchase houses. This way, they pay the lowest interest rates in the world by a wide margin.

With so many people playing this game, massive amounts of yen are borrowed and sold in the foreign exchange market every day. This selling has pushed the yen down to a twenty-year low (Exhibit 6-5), even though Japan is still running one of the world's largest current account surpluses. The weakness of the yen, in turn, makes the yen-carry trade even more attractive, because the liabilities of those who borrowed in yen diminish as the yen weakens relative to their home currencies. The prospect that the carry trade will sustain pressure on the yen encourages even more of these trades in a self-fulfilling prophecy.

The resulting minibubbles in places ranging from Korea to Spain are nightmares for central banks in Japan and the rest of the world. Even if the ECB tries to rein in housing bubbles in Spain and other countries inside the eurozone by raising interest rates, those borrowing in yen will not be affected, because the interest rates they pay are determined by the Bank of Japan. Higher interest rates in the eurozone, however, will widen the yield spread between the euro and the yen. That, in turn, will lift the euro against the yen by enticing capital away from the yen and into the euro. The weaker yen reduces the liability of those borrowing in yen, and emboldens even more people to fund their investments with borrowed yen. In other words, the growth of the yen-carry trade significantly undermines the effectiveness of local central banks.

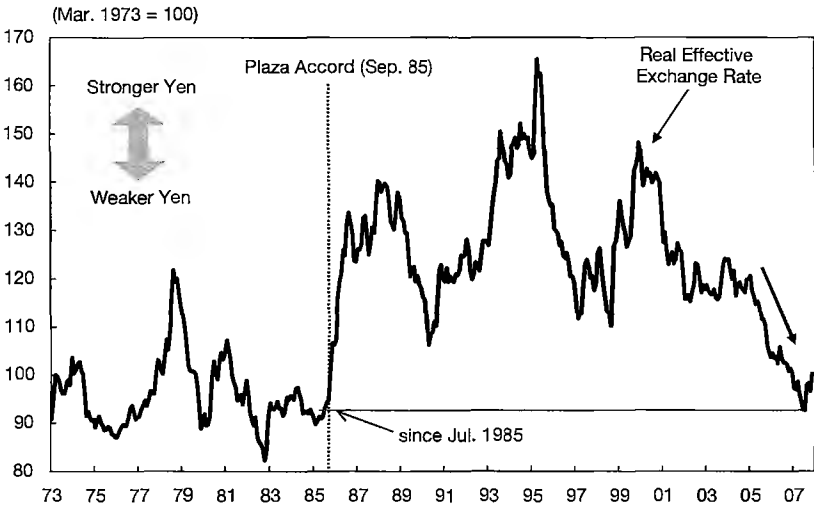
Exhibit 6-4. Japanese interest rates are the lowest in the world



Note: EU interest rate before 1998 is substituted by German call-rate. Swiss interest rate before Jan. 2000 is substituted by three months Libor.

Sources: BOJ, FRB, ECB, Bundesbank, BOE, CBC, RBNZ, and Bloomberg

Exhibit 6-5. Japanese yen has fallen to a twenty-two-year low



Source: Bank of Japan

Capital flows aggravating global imbalances

The story does not end there. Higher European interest rates attract more investment funds seeking higher returns from abroad, which bolsters domestic investment in spite of monetary tightening. Moreover, the euro's appreciation against the yen puts European manufacturers competing with the Japanese at a great disadvantage. That in turn widens the trade imbalance between the two regions in Japan's favor. In other words, the ECB's rate hikes punish hard-working manufacturers while having no impact on—or actually encouraging—speculators borrowing in yen. It is no wonder that European monetary authorities have indicated their strong displeasure with the Japanese at virtually every G7 meeting since 2005.

The problem facing Japan's central bank is equally thorny. Domestically, there is no inflation to speak of, and some prices are still falling. The economy is also showing no signs of the kind of overheating that would require monetary tightening. If anything, lackluster domestic demand is prompting politicians, academics, and even the IMF to tell the bank to keep rates low for as long as possible, in the hope that low rates will encourage domestic investment.

In reality, however, low domestic interest rates have encouraged capital to leave Japan, and have only added to the weakness of the yen, while doing little to stimulate domestic demand. The weak yen and lackluster domestic demand, in turn, encouraged Japanese companies to increase exports, adding to an already massive current account surplus. In other words, the Bank of Japan's low interest-rate policy is helping Japan only by weakening the yen and exacerbating the nation's external imbalances. The net result is that the bank has been facing a situation in which the yen's value is stable or even increasing at home, even while it has fallen like a rock against other currencies.

At the other extreme, the central bank having the most difficulty trying to rein in domestic investment activities is the Reserve Bank of New Zealand (RBNZ). With the highest interest rates in the developed world, New Zealand has attracted huge capital inflows from global investors. Those inflows have contributed in no small part to the nation's investment boom. Even though the central

bank has tried to temper the boom by raising interest rates, its efforts have been undermined by capital inflows from abroad.

These massive capital inflows pushed the New Zealand dollar to a twenty-year high against the yen and a twenty-two-year high against the U.S. dollar by mid-2007. That, in turn, has worsened the international competitiveness of New Zealand to the point at which the country is now running the largest current account deficit of any developed country. In other words, New Zealand's high interest-rate policy is having a cooling effect on the economy, only by strengthening the local currency and enlarging the country's trade deficit.

Economies and economics entering uncharted waters

No economists have suggested that the central banks with the lowest interest rates should have a disproportionate impact on global investment activity, or that central banks with the highest interest rates should attract a disproportionate share of global savings. Furthermore, no economics text has indicated what the Bank of Japan or the RBNZ should do under these circumstances. This is because most if not all the work done by academic economists on so-called "open economies" dealt with open trade in goods only, and seldom included open trade in capital. In other words, the economics profession has never envisioned a world with a globalized financial market, in which anyone anywhere can borrow and invest in any currency at any time. But that world is here today. It is here for the first time too: we are truly entering uncharted waters. Today, it is just as easy for Japanese households to invest their savings in New Zealand dollars as for Korean or Croatian households to arrange home mortgages in yen. The ease with which these transactions can be undertaken was totally unthinkable only ten years ago.

When the market is globalized to this extent, capital moves to equalize the expected return in all markets. To the extent that countries with strong domestic demand tend to have higher interest rates than those with weak domestic demand, money will flow from the latter to the former. These flows will strengthen the currency of the former, and weaken the currency of the latter. They may also add to already strong investment activity in the former, while subtracting from already weak investment activity in the latter.

To the extent that countries with strong domestic demand tend to run trade deficits and those with weak domestic demand trade surpluses, these capital flows will exacerbate the trade imbalance between the two. In other words, these flows are not only against the interest of individual countries, but are also detrimental to the attainment of balanced trade between countries.

These flows also lead to reduced effectiveness of central banks in their own economies, as higher interest rates designed to cool domestic investment end up attracting more investment funds from abroad, while low interest rates designed to stimulate domestic investment end up pushing investment funds away from home. Indeed, in this world, central banks setting low interest rates end up stimulating investment outside their borders through the carry trade, and those setting higher rates end up attracting a disproportionate share of global savings.

Although the Bank of Japan currently finds itself in the former position, this is not a problem specific to Japan or to any individual country. It is a problem for *all* central banks in a globalized financial market. Japan happens to have the lowest interest rates today, but its problems will be passed on to another central bank once this changes.

Indeed, two other central banks—the Swiss National Bank and the Central Bank of China in Taiwan—faced problems similar to those of the Bank of Japan until recently. Both the Swiss and Taiwanese economies were doing reasonably well with no inflation. As a result, interest rates in the two countries were in the two-percent range, making them the next most attractive candidate for the carry trade after Japan. Indeed, carry trades denominated in the Swiss franc and New Taiwan dollar were quite common until these central banks raised their interest rates to the three-percent range in 2007.

Bank of Japan Governor Toshihiko Fukui noted in a May 10, 2007, presentation that, in reference to the carry trade, the yen and Swiss franc share a similar story: both had gone from being one of the strongest currencies in the world ten years ago to one of the weakest now because of low interest rates.⁵

Their fall from grace is particularly unusual given that both economies continue to grow at or above potential, and that both have achieved commendable unemployment and price outcomes. Investment managers, however, have ignored these achievements, and are now increasingly focused only on yield differentials.

No policymaker would argue that the central bank with the lowest interest rates should control a large portion of investment activities around the world. No economist would argue that such a world is desirable on grounds of either efficiency or equity. Moreover, the adverse exchange rate movements created by these capital flows have caused global imbalances to reach alarming levels. If no one wanted this outcome, how did we get it?

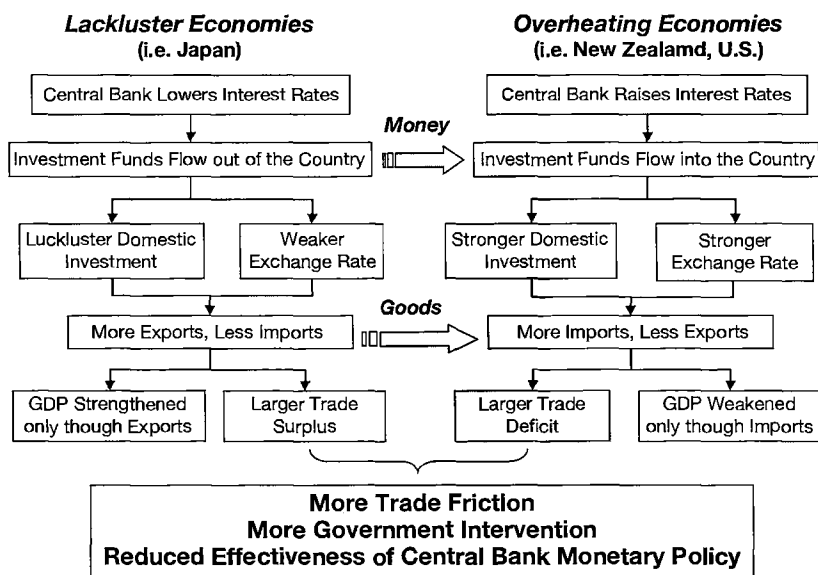
Current turmoil driven by financial globalization

We got it because the opening of capital markets in these countries brought the financial sectors of individual countries together into a single global market, while governments and local labor markets remained strictly local because of various barriers to immigration. In a single market, there should only be one price per item, and the item in question here is the rate of return on capital. When individual countries remove the barriers to capital flows, market forces work to take the capital away from the low-yielding countries, and place it in high-yielding countries, with the result that the yield in the former is pushed higher, and the yield in the latter is pushed lower. Market forces will continue to operate in this way until the ultimate goal of equalizing the return on capital across countries is achieved. In other words, this is a perfectly natural outcome of market forces trying to equalize the return on capital across national boundaries (Exhibit 6-6).

The problem is that the equalized rate of return might not be in the interest of any individual country. For example, if market forces are trying to equalize global interest rates at, say, 6 percent, those countries that need rates above or below 6 percent will suffer. Indeed the market-driven 6 percent interest rate may not be in the interest of any individual economy.

Economic globalization should also lead to the “law of one price” applying across countries, not only for the return on capital, but for all goods. During the equalization process, prices will rise in some countries and fall in others as they move toward the international level.

Countries such as Japan and Switzerland, in which prices were originally quite high in relative terms, will experience deflation-like symptoms as a result of market opening and globalization. Those with lower prices, meanwhile, will see inflationary tendencies as

Exhibit 6-6. An ultimate world of free capital movement?

Source: NRI

overseas markets for their products open up and domestic price levels rise.

When central banks set domestic interest rates in response to these price shifts, countries with rising prices will see higher interest rates, and those with falling prices will see lower rates. That, in turn, creates interest rate differentials across countries, adding to the capital movements.

Open capital markets are a relatively new phenomenon

The major economies opened their markets to cross-border capital flows only recently. For example, the U.S. market was not liberalized until the *Monetary Control Act 1979*, which started the deregulation of interest rates. Before this act, there was a raft of controls and regulations that insulated the U.S. market from the rest of the world. These measures included Regulation Q, which controlled domestic interest rates; eurodollar reserve requirements, which discouraged arbitrage between domestic and

offshore markets; and the Fed's "Bank of America letter," which discouraged domestic banks from offering foreign currency-denominated instruments to U.S. retail customers.

The deregulation of Japan's capital market started in December 1980, when the Foreign Exchange Law was amended to allow, in principle, investment in foreign assets for the first time. However, it took until 1997 to remove all remaining controls on cross-border portfolio flows. Many European countries also removed their controls on cross-border portfolio flows for the first time during this period. In other words, inter-market arbitrage started only during the past twenty years, with the potential for much more. The resultant capital flows, however, have brought trade imbalances between countries to an unprecedented level.

Imbalances would not be problematic if global economy were fully integrated

External imbalances become an issue because they represent a transfer of income from one area to another. In calculating the national income or GDP of a country, for example, exports are added and imports subtracted. Today, the U.S. current account deficit is almost 6 percent of GDP, and New Zealand's is more than 9 percent of GDP. This means that a lot of income (and possibly jobs) was transferred out of these countries to their trading partners. (Deficit countries received the goods made by the surplus countries, so it is not all lost.) With a deficit of more than 3 percent considered to be unhealthy, it is easy to see why policymakers around the world are so concerned about current global imbalances.

The conflict between the need of individual countries to have reasonably balanced trade on one hand and market-driven capital flows exacerbating trade imbalances on the other stems from market forces trying to integrate economies while people and governments are operating as unintegrated entities. To see this, let us assume that Japan and New Zealand will eventually join to become one country. Their relationship would then be similar to that of California and New York in the U.S., and no one would give a second thought to trade imbalances between the two regions, no matter how large they might become.

The balance of trade between states like California and New York is not an issue because people, capital, and goods are free to flow between the two. If New York has a booming economy, but California is in the midst of recession, people will move from California to New York in search of better job opportunities. Similarly, if investment opportunities are more attractive in California than in New York, capital will flow from New York to California in search of higher returns. Even if people are not so free to move, the federal government in Washington can use its powers to redistribute income from the area experiencing an inflow of income (i.e. a trade surplus) to the area experiencing an outflow of income (i.e. a trade deficit). This is possible because both California and New York are part of the U.S.

With all factors of production free to move between New York and California, it also makes no sense for the two states to have separate monetary policies. Given the ease with which money can move between them, any difference in interest rates between the two would immediately result in massive arbitrage flows to equalize rates.

Today, capital is moving between countries *as though* they were going to become one massive nation. This is why investors are paying so little attention to the huge current account deficits of the U.S. or New Zealand, and why monetary policy is losing its effectiveness at the national level, in the same way that New York and California cannot have separate monetary policies.

The problem, however, is that neither Japan nor New Zealand plans to merge into a single nation. Both have strict limitations on immigration, which restrict the free movement of labor between the two countries. In other words, these two countries will remain separate nations. This means that trade imbalances are likely to remain an important political issue for years to come.

Some may argue that if capital is earning a higher return abroad, there must be efficiency gains for the economy. Although that may be true for investments between New York and California, the final outcome is not so clear when two different countries and two different currencies are involved. As Richard Cooper (1997) has argued,⁶ there are many cases of cross-border capital flows that are hard to justify on efficiency grounds. These flows include those driven by differences in tax laws and accounting treatments. It is also difficult to argue that the massive purchases of U.S.

treasuries by the Japanese in the 1980s, which helped fund the U.S. budget deficit, were the best use for those funds. Moreover, Japanese investors ended up incurring huge foreign-exchange losses when the dollar fell from 240 yen in 1985 to 80 yen in 1995. Similarly, large European investments in the U.S. from 2001 to 2003 ended up costing European investors dearly as the euro climbed sharply higher against the dollar.

Imbalances will be problematic as long as restrictions remain on immigration flows

In economics, there is a rich literature on the concept of optimal currency areas. It is argued that if there is free movement of capital, labor, and goods between two regions, then they should adopt a common currency. The concept also states that, to have a common currency, there should be free movement of people, goods, and capital. In areas such as the eurozone, where governments have invested a great deal of time and effort in enabling the free flow of people, capital, and goods, a single currency will provide major benefits for all concerned. Globally, however, such cases are the exception rather than the rule.

Theory and reality are at greatest odds when it comes to the flow of people, because immigration remains a thorny issue in most countries. Even if immigration were fully liberalized, differences in language, race, religion, and culture would continue to hamper the free movement of people. The world consists of 200 independent nations in part because there are so many different value systems. The barriers created by the differences in these values cannot be overcome by economic exchanges alone. Nor is it realistic to expect the advent of a world government capable of redistributing income across national borders. This means trade imbalances—which signify the transfer of income from deficit to surplus nations—will always remain a problem.

National policy objectives not consistent with globalization

The key question facing the world economy today, therefore, is really the converse of the optimum currency area concept. In other words, if the free movement of one or more factors of production is

not achievable, should the remaining factors be allowed to move freely? More precisely, if labor is not allowed to move freely across national borders, should capital be allowed to do so?

Providing a full answer to this question would probably require volumes of research. But in view of the explosion of cross-border capital flows during the past two decades contributing to adverse currency movements and the widening of global imbalances, some restrictions on those flows may be desirable. Alternatively, more direct government intervention in the foreign-exchange market may be required if capital flows themselves are to be left to the private sector.

Both of these positions are highly controversial in the present academic climate, which views with suspicion any market restrictions or interventions by the government. But if capital flows are to be liberalized, policymakers must also have the ability to keep an eye on exchange rates. Under the current regime of liberalized capital flows, the market no longer has a mechanism to keep trade imbalances within politically acceptable limits.

This is almost a mirror image of the world that existed before efforts to liberalize capital flows commenced in the early 1980s. Then, trade was free, but capital flows were regulated, so the foreign-exchange market was driven largely by transactions directly related to foreign trade. The currencies of surplus nations therefore tended to strengthen, and those of deficit nations to weaken. In other words, the currency market was acting as a natural stabilizer of trade balances between nations.

But now that capital flows have been liberalized, the foreign-exchange market is dominated by flows seeking to equilibrate investment returns across countries, causing money to flow from countries with low interest rates to those with high rates. With no mechanism left to balance trade, unprecedented problems have emerged. The U.S., for example, has watched a massive expansion of its trade deficit spark nascent protectionist sentiment. The effectiveness of national monetary policy has also diminished.

The case for government intervention in the foreign-exchange market

Already one central bank has decided not to wait for the theoretical resolution of this problem, and has taken action instead. Starting

in June 2007, the RBNZ began intervening in the foreign-exchange market to push the New Zealand dollar down while raising interest rates to cool the domestic economy. The RBNZ had to intervene because higher interest rates at home would push its currency higher, and aggravate the nation's already serious current-account deficit. That the RBNZ had not intervened in the currency market since 1985 suggests that this was a pivotal decision indeed. It suggests that New Zealand authorities could no longer ignore the damage caused by free movements of capital and the resulting adverse exchange-rate movements.

Although the actions of the New Zealand central bank have yet to be followed by other central banks, bills in the U.S. Senate seek to force the U.S. Treasury Department to intervene in the foreign-exchange market.⁷ The authors of these bills all recognize that the persistent misalignment of exchange rates has contributed greatly to the massive U.S. trade deficit, and that government actions are needed to rectify exchange rates. Although some of these bills contain protectionist elements, that market forces have not only failed to rectify trade imbalances but actually made them worse suggests that some kind of government action may be necessary.

Even if central banks decide to intervene in the foreign-exchange market, some would argue that their actions will be ineffective because private capital flows are now so much larger than those the central banks can mobilize. But if central banks side with trade flows, and coordinate their interventions, their impact could far exceed the actual sum of money they can mobilize. Siding with trade flows means buying the currencies of surplus countries, and selling the currencies of deficit countries.

Central banks are the only participants in the foreign-exchange market who do not have to worry about profits and losses. When they team up with trade flows, and start pushing exchange rates in a direction to reduce trade imbalances, private-sector participants, who do have to worry about losing money, become scared. After all, private-sector participants are in the foreign-exchange market not to prove how strong they are, but to make money. When they see central banks charging their way, many would prefer to avoid a confrontation, because central banks working with trade flows have potentially unlimited resources. When private-sector participants decide to square their positions to avoid exposing themselves to a central bank onslaught, the impact of the central bank's initial

actions is multiplied many times, pushing exchange rates in the desired direction. The best example of this phenomenon was in the three years after the Plaza Accord of September 1985, when the central banks of the G5 successfully pushed the overvalued U.S. dollar down from 240 yen to 120 yen. However, central bank interventions are ineffective or easily overrun when they go against trade flows.

Time to think about capital-market opening

Mr. Fukui noted in his remarks on February 15, 2007, that the conduct of monetary policy has become an extremely complex process, in which an excessive focus on domestic conditions can lead to undesirable distortions overseas, while a fear of fomenting bubbles in other countries can cause policy to disturb the rhythms of the domestic economy and prices. He concluded his remarks by noting that the current “vague, neither here nor there” state of affairs has “persisted for a long time,” and that conducting policy in such an environment is like “trying to solve an equation with multiple unknowns that are constantly changing.” His views are probably shared by monetary authorities in other nations.

Financial globalization makes sense if the world will eventually become a single nation. The current turmoil stems from financial globalization happening despite no country having global political integration as a policy goal. Nor has there been any move to create a world government with the authority to redistribute income.

Faced with these constraints, it is time for policymakers and scholars to think seriously about the benefits and costs of unrestricted capital-market opening, instead of blindly assuming that anything that increases the freedom of the private sector is good for the economy. Although the economics profession has proven that open trade in goods improves the welfare of the concerned economies, it has not demonstrated that open trade in capital will produce the same result when other factors of production are not free to move.

Quality of investors also a factor

Much will also depend on the quality of the investors involved, as well as whether we are dealing with direct investment or portfolio

investment. If investors paid more attention to trade imbalances, and refrained from investing excessively in deficit countries, some of the adverse currency movements noted would be contained.

For example, investors who are sending money abroad as direct investment are likely to have done their homework about the host country, including its trade balance. They must do so because once they build a factory or set up operations in the host country, they cannot leave easily. Portfolio investors, on the other hand, often have no time to study the countries they are investing in, especially when they are competing against market indexes such as the MSCI.

Although academic economists tend to assume that investors are always rational and know what they are doing, the actual market is littered with examples of ignorance or worse. For emerging markets, indeed, nothing is worse than an influx of cash-rich but ignorant investors from the developed world, as the Asian currency crisis of 1997 amply demonstrated. In particular, the investors who complained about various structural problems in the region including Thai bankruptcy laws *after* the crisis erupted proved themselves to be totally unqualified to invest in Thailand: it was their duty to check those laws *before* they put money in the country.

Although individual governments and the IMF seek to reduce trade imbalances, their efforts often stand in contradiction to the market trend toward globalization. Indeed, the IMF itself seems to be in a state of schizophrenia, in that one part of the organization is pushing for more capital-account opening⁸ while the other part is fighting trade imbalances brought about by the free movement of capital. This contradiction between free capital flows and trade tensions brought about by the lack of political integration will not go away for decades.

If imbalances prove too much for the global economy to absorb, the market will act, usually in a highly unpleasant way. The action may include a collapse of the dollar and U.S. asset prices. The resultant losses incurred by surplus-country investors in a U.S. crash would put a temporary stop to the kind of capital flows indicated in Exhibit 6-6. The recent subprime fiasco in the U.S. did discourage capital inflows into the country and weaken the dollar. The weaker dollar may also help to reduce the U.S. trade deficit.

But once investors in the surplus countries get over their losses in a couple of years, they will see that the U.S. trade deficit is declining, and conclude that “the dollar has fallen enough.” This will prompt the same capital flows indicated in Exhibit 6-6 to start all over again. Those flows will not stop until another crash forces another temporary suspension. Indeed the world may repeat this silly cycle of destabilizing capital flows and financial crashes for decades without any benefits or efficiency gains accruing to any of the participants.

To prevent these cycles of capital flows and financial crashes, the finance ministries in charge of exchange rates might want to consider implementing something similar to the Plaza Accord to realign exchange rates before the next crash. Authorities might also want to consider limiting the amount of deficit-country assets that institutional investors in surplus countries may hold. The purpose of this limit would be to *remind* investors that they may be contributing to global imbalances that could cost them dearly in the end.

If no action is taken, and trade imbalances are allowed to expand unhindered, protectionism will rule the day, in what may be the worst of all outcomes. With less-than-perfect investors and less-than-perfect economic integration, it is hoped that policymakers will be realistic and not beholden to a particular ideology in dealing with the problems of capital flows, exchange rates, and trade imbalances.

3. Correction of global imbalance must also be gradual

U.S. still vulnerable to capital flight

Even though private capital flows have been destabilizing for trade balances, capital flows moving in the right direction *but too quickly* could also be destabilizing, especially if they involved a massive exodus of Chinese or Japanese money out of the U.S. On this point, U.S. authorities have completely changed their view in the past three years, and are now downplaying its danger. The new position was first expressed by Greenspan in his congressional testimony on February 17, 2005. During this testimony, North Carolina Representative Walter B. Jones asked, “If Japan owns

over \$700 billion of the U.S. debt, mainland China and Hong Kong together hold over \$250 billion of U.S. debt, Mr. Chairman, the question is, if this deficit continues to rise, and it looks like we are not going to do what needs to be done to hold it from rising, what would be the impact on U.S. financial markets if Japan or China were to stop buying U.S. treasury bonds?" In effect, Jones was asking what would happen to U.S. interest rates if Japan or China sold their holdings of U.S. government debt.

Greenspan's response was shocking. He replied, "We have looked into that question, and I think that we have concluded that the effect of foreign borrowing of U.S. treasury instruments has lowered long-term interest rates a modest amount. And therefore, if they were to choose to stop buying or to sell, it would raise interest rates, but, again, by a modest amount."⁹ The phrase "modest amount" implies an increase of, say, 0.3 percent to 0.5 percent. I was shocked when I saw this, and even considered the possibility that the Fed chairman had grown senile.

For the past twenty years, the U.S. government has feared few things as much as a sell-off of U.S. treasury bonds by Japanese and Chinese investors. Greenspan was also concerned about this possibility. Throughout the past two decades, the Fed and treasury officials with whom I have spoken were always worried about this danger. But in 2005, the U.S. government's view changed.

Dollar flight has happened before

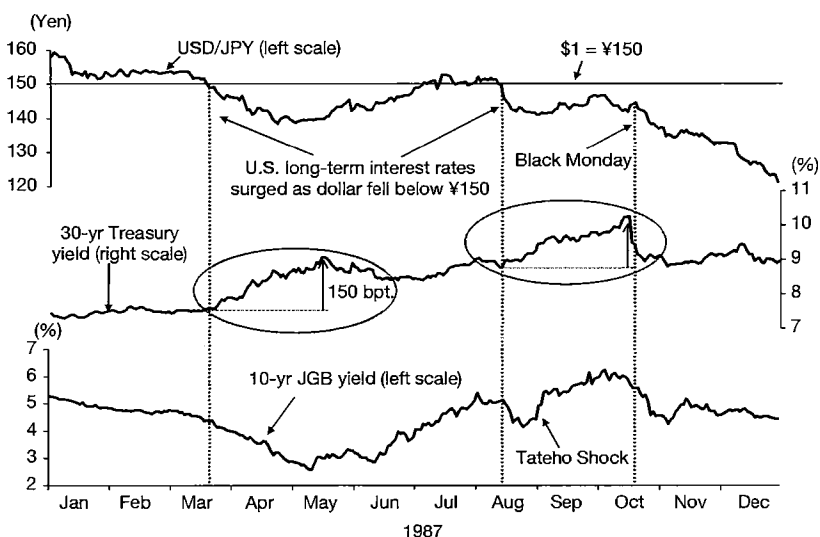
The earlier concerns were well-founded. In the 1980s, for example, actions by foreign investors; and Japanese investors in particular, led to sharp fluctuations in U.S. interest rates. The most shocking instance was on March 25, 1987, when the dollar fell below 150 yen for the first time ever. Fund managers in Tokyo were already nervous as it was just a few days before the Japanese fiscal year-end. Only six weeks earlier, in February 1987, the G7 nations had signed the Louvre Accord, effectively declaring that the dollar had fallen enough: the dollar had plunged from 240 yen to just over 150 yen in the seventeen months since the Plaza Accord was signed on September 22, 1985. With the Louvre Accord in effect, few currency-market participants expected the dollar to fall through the 150 threshold. But fall it did, and just five days before the all-critical fiscal year-end in Japan. This sparked massive turmoil in the markets.

First, Japanese investors who had been buying U.S. treasury bonds suddenly had to reverse course. That caused the benchmark U.S. long-term interest rate to surge from 7.5 percent to 9 percent, or 150 basis points, in the space of just six weeks. Long-term interest rates in Japan plunged from about 4 percent to 2.5 percent as money flowed back into the country. The dollar, meanwhile, fell a full 13 yen to 137. Exhibit 6-7 illustrates these three moves.

Although the government statistics showing the amount of U.S. treasury bonds bought or sold by Japanese investors are released with two-month lag, market participants in Japan were fully aware of what had triggered the sudden moves in U.S. and Japanese interest rates. But many in the U.S. bond market—including the authorities—did not have their eyes on developments in Japan, and were under the impression that interest rates had risen because of domestic inflation concerns.

U.S. authorities, led by Fed Chairman Paul Volcker, eventually realized the actual cause of the rise in interest rates, and moved to arrest the dollar's decline. The U.S. intervened in the currency market, and the Federal Reserve Board even considered raising the official discount rate. Raising short-term rates proved to be

Exhibit 6-7. "Dump U.S." selling in 1987



Source: Japan Bond Trading Company, Federal Reserve Board, Federal Reserve Bank of New York.

enough in the end, but for a moment the mighty U.S. turned deathly pale.

Japan's response

The dollar's fall below 150 was also a major shock for the Japanese authorities, who were confident that the Louvre Accord had solved the problem of skyrocketing yen. They responded to the crisis by requiring all banks in Japan engaging in foreign-exchange transactions to report each and every trade, including daily minimum and maximum positions. The authorities have the right to require this sort of reporting, and on this occasion they took full advantage of it by massively increasing reporting requirements with a view to raising the administrative costs involved in processing currency transactions. These extraordinarily onerous requirements effectively tied the hands of domestic and foreign banks.

The increased reporting obligations were backed by the implicit threat that any bank selling dollars would find its name in the weekly tabloids. If the weeklies reported that sales by a given bank had contributed to the dollar's decline, that institution would almost certainly come under a barrage of public criticism. With these measures, the authorities choked off dollar sales.

At the time, foreign banks in Japan made their money in currency dealing, because local banks had a stranglehold on lending to Japanese corporations. The new reporting requirements, therefore, took away their bread and butter. The foreign banks fought back, even complaining to the U.S. government that these demands violated the market-liberalization principles agreed to by the Yen-Dollar Committee in the early 1980s. But the U.S. had little choice in the matter. Stung by rising interest rates, it was unable to criticize the actions of the Japanese government, which was trying to eliminate the root cause of rising U.S. interest rates. In reality, U.S. government officials were probably grateful to the Japanese for stopping the dollar's slide when they themselves did not want to get their hands dirty.

The dust finally settled in the second half of May, as the U.S. authorities put themselves in step with their Japanese counterparts, and declared that they did not seek a weaker dollar. The dollar soon rallied back to 150, U.S. bond yields subsided,

and the markets regained composure, at least until September. Nevertheless, the episode demonstrated that the departure of Japanese investors had the potential to raise U.S. long-term interest rates by 150 basis points (1.5 percent). This was far from the “modest” increase predicted by Greenspan.

How the view came about

So how did the new view expressed by Greenspan in February 2005 come about? In the spring of 2007, a former Fed official provided some background at a seminar given to Nomura clients. He explained that the change in thinking came about after Fed economists analyzed the impact of massive foreign-exchange intervention carried out by Japan between 2003 and March 2004. The official noted that the Bank of Japan sold 30 trillion yen (equivalent to \$285 billion) to keep the Japanese currency from appreciating, and used the dollars it obtained to buy U.S. treasury bonds.

If foreign government purchases of U.S. Treasuries did have a significant impact on U.S. interest rates, yields should have fallen when Japan started buying dollar bonds. Similarly, they should have risen when the purchases stopped. But in this case, the Bank of Japan's purchases had almost no impact on the U.S. Treasury market. This led the Fed to the view that the global bond market is now so deep and so liquid that even interventions of this magnitude have negligible effect.

However, the event noted is totally insufficient to prove that a stoppage or reversal of foreign fund inflows would not have a major impact on the dollar or U.S. interest rates. That the Japanese government had to purchase 30 trillion yen worth of dollars to prevent the yen from appreciating means that the private sector was *selling* 30 trillion yen worth of dollars for yen during the same period. Had the Japanese government ignored this outflow from the dollar and inflow into the yen, the result very likely would have been a steep fall in the dollar and a sharp *rise* in U.S. interest rates. In other words, it was only because Japanese authorities moved in a direction opposite to that of private capital flows that the dollar did not fall and U.S. rates did not rise.

This begs the question what would happen if foreign investors decided to shift assets out of the dollar and into other currencies

without the Bank of Japan acting to neutralize the shift. Based on the preceding, the obvious answer is that both the dollar and U.S. interest rates would be adversely affected.

Moreover, if it were financial authorities in Japan and China that were bailing out of the dollar, private-sector investors—both foreign and domestic—would probably rush to dump their own dollar holdings as well. After all, private-sector investors all know that the Japanese and Chinese central banks have propped up the dollar in the face of huge U.S. current account deficits. The likely result of a Japanese and Chinese departure, therefore, would be skyrocketing U.S. interest rates.

Lessons erased from memory

Twenty years have passed since the 1987 incident. When the subject came up in a conversation during my visit to Washington in 2006, I noticed that none of the U.S. officials I spoke with remembered it. In other words, the lessons it taught us have been completely wiped from the U.S. institutional memory.

Perhaps these officials are of the opinion that something that hasn't happened for 20 years is unlikely to happen again. Still, the U.S. current-account deficit as a percentage of GDP is already nearly twice what it was in 1987, while Japan's current-account surplus as a percentage of GDP has reached levels comparable with those of 1987. These two factors could contribute to dollar selling and yen strength, respectively, just as in 1987.

It should also be noted that even though Greenspan's reply in the congressional testimony represents the official U.S. position, there are many papers, including those done at the Fed, that suggest that foreign capital inflow does have significant impact on U.S. interest rates. Those papers include Warnock and Warnock (2005), and Genberg et al. (2005).

How long will it take to rectify America's trade imbalance?

It will clearly be impossible for the U.S. to eliminate an external deficit amounting to 6 percent of GDP in a short time. Such an action *would* trigger a collapse of the global economy. U.S. authorities must therefore move gradually to rectify the trade

imbalance. But if the deficit does not decline, or keeps growing, more people will start to warn of an eventual collapse of the dollar. What the U.S. authorities fear more than anything else is a situation in which people start to view the U.S. as making nothing but paper dollars, which it then uses to buy up the rest of the world's production, and that the dollar will become worthless as the U.S. production base disappears.

Voices saying this are already being heard from some quarters. One U.S. investment bank, for example, wrote that the U.S. government should negotiate with Japan and China to have its debt forgiven.

The U.S. government fears these voices because they indicate that people are already beginning to doubt the dollar. It must do something to bolster confidence in its currency against these concerns. By reducing the trade deficit, it hopes to persuade Japanese and Chinese investors to hold onto their dollar bonds for a little longer. There is no need to eliminate the deficit entirely, which in any case would be extremely difficult. What the U.S. needs to do is devalue the dollar gradually to allow improvements in the trade deficit.

Americans are quick to throw in the towel... and quick to pick it up again

Will they be successful?

The U.S. labor market is completely different from those in Japan and Europe. When a factory closes in Japan, no one considers building something there again. A plant closure is seen as the final step in a long process, something done only after everyone who worked there has been taken care of. It entails huge costs, and is a long-term decision that is not easily reversed. The same is true in a large part of Europe.

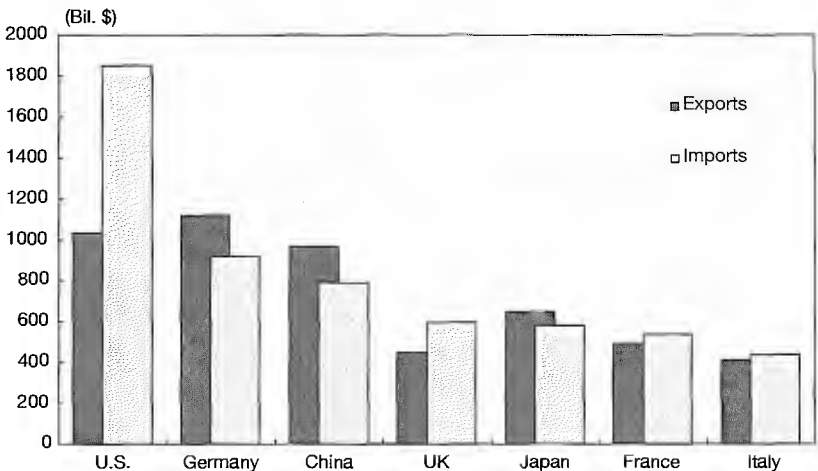
But in the U.S., the extreme flexibility of the labor market means that while Americans are quick to throw in the towel, they are also quick to pick it up again. In other words, it is far easier to open or close a plant in the U.S. than in Europe or Japan, because it is easier to fire people. This flexibility makes the U.S. economy much more responsive to changes in relative prices (exchange rates).

The U.S. trade deficit with Europe improved substantially after the Plaza Accord was signed in September 1985, and by 1992 it had moved into surplus. Although the improvements vis-à-vis Japan were not as pronounced, the dollar weakness that resulted from the accord provided a major boost for American manufacturers.

This begs the question of what the U.S. would export if the dollar was to weaken. Until it was overtaken by Germany in 2003, the U.S. was actually the world's largest exporter (Exhibit 6-8). If the dollar was to fall sharply, it is most likely that Japanese, German, and Korean manufacturers with U.S. production bases would increase exports from the U.S.; Toyota and Nissan would do just as well as Ford and GM. Foreign companies have indeed increased their exports from the U.S. as the dollar has weakened. This is probably how U.S. authorities intend to deal with the problem.

Although labor regulations would prevent something similar from happening in Japan or Europe, the great flexibility of the U.S. labor market makes it possible to envision a sharp devaluation of the dollar bringing significant changes in the industrial structure. The big challenge, therefore, is how to bring the dollar down, especially against the Asian currencies, so that necessary

Exhibit 6-8. The U.S. is still the second-largest exporter



Note: Amounts are for 2006.

Source: Individual countries' trade statistics and the Federal Reserve Board.

industrial changes in the U.S. can take place without disturbing the global financial market.

ENDNOTES

1. The word 'efficient' is used here in reference to the amount of increase in aggregate demand brought about by a unit increase in budget deficit. From this perspective, a tax cut is the least efficient of fiscal stimuli because a significant portion of the cut may be used to pay down debt or earmarked for rebuilding financial assets (savings).
2. See OECD (2006).
3. International Monetary Fund (2006), p.1.
4. Erceg, Guerrieri and Gust (2005).
5. Bloomberg (2007) or Jiji Press English News Service (2007), May 10.
6. Cooper (1997).
7. See U.S. Senate Committee on Banking, Housing and Urban Affairs (2007) and U.S. Senate Finance Committee (2007).
8. Fischer (1997).
9. Bloomberg (2005).

Ongoing Bubbles and Balance Sheet Recessions

1. America's situation: the subprime fiasco

The immediate problem facing the U.S. economy is the collapse of the housing bubble and the subprime crisis. A huge number of financial institutions on both sides of the Atlantic were battered by the crisis, and unsold inventories of new homes in the U.S. are at their highest level ever. To the extent that this crisis was precipitated by the bursting of an asset-price bubble, it has the potential to drag the U.S. into a balance sheet recession.

The origins of the subprime crisis date back to the IT bubble of 2000. When that bubble burst, the Fed suddenly realized that U.S. aggregate demand was falling sharply in a decline that, if left unchecked, could throw the economy into a full-blown recession. The Fed responded by slashing interest rates from more than 6 percent to 1 percent. The U.S. housing sector remained calm during the IT bubble, with no signs of overheating. When the Fed cut rates to the lowest level seen since 1957, however, a housing bubble was sparked as the home mortgages people could afford increased dramatically with lower interest rates.

Even though house prices skyrocketed, Greenspan remained calm, refusing to use the term bubble to describe what was happening in the housing market. He remained calm probably because he had a plan. His intention was to prop up the housing

market to sustain aggregate demand while companies hurt by the bursting of the IT bubble focused on repairing their balance sheets. By replacing the IT bubble with the housing bubble, he managed to keep the U.S. economy going so that U.S. companies had the revenues needed to clean up their balance sheets.

At the time, he probably reasoned that once U.S. companies finished repairing their balance sheets, they would come back and start borrowing money for forward-looking projects again. When that happened, interest rates would rise, ending the housing bubble. In this scenario, the U.S. would come out of the IT and housing bubbles with a healthy corporate sector acting as the locomotive for the economy.

This strategy of Greenspan's worked remarkably well for the first three years. The U.S. economy remained strong thanks to the housing bubble while companies diligently repaired their balance sheets. By the end of 2003, most U.S. companies had finished cleaning up their balance sheets. The Fed then went on to raise rates seventeen times starting in June 2004, to 5.25 percent, believing that resurgent corporate demand for funds would also lift long-term rates.

The problem arose, however, when it was discovered that companies with strong financial positions were still refusing to borrow money. Greenspan even wondered openly in his congressional testimonies why the companies that should be borrowing money at that stage of the business cycle were not doing so.¹ The U.S. was encountering the same "debt rejection syndrome" observed in Japan during the past couple of years, as described in Chapter 2. Indeed, the U.S. economy is in stage 4 of the *yin-yang* cycle, in which companies that had to repair their balance sheets are in no mood to borrow money again even after the repairs are done.

Because of this syndrome, long-term rates in the U.S. remained low, hovering between 4 percent and 5 percent, even though short-term rates climbed as high as 5.25 percent. That kept the housing bubble going for another two more years, because the housing market typically responds to long-term rates, and those rates did not go up much in spite of the Fed tightening.

Most ordinary homebuyers, on the other hand, had already bought a new house or moved into a better one during the 2001–03 period. With the corporate sector not borrowing money and

ordinary households finished buying new homes, fund managers in Wall Street during the 2004–06 period became desperate for new borrowers, especially those willing to pay more than the rising money-market rates. So they discovered the largely untapped pool of subprime borrowers. Convincing themselves that higher rates would compensate for the additional risk, Wall Street bankers poured nearly \$1 trillion into this market.

The sudden inflow of these funds completely overwhelmed the existing infrastructure of the subprime market, and produced a most reprehensible drop in lending standards at all levels, including the rating agencies. The process of securitization, by which those mortgages were chopped up, combined with other financial instruments, and sold to outside investors, added to the lax attitude adopted by many mortgage originators, who stressed quantity over quality.

In the spring of 2006, U.S. housing prices finally peaked and started heading south. Because most subprime borrowers were enticed into buying a house on the assumption that house prices would continue to rise, and that would allow them to build equity in the houses so that they could switch into prime fixed-rate mortgages, the reversal means that they are stuck with high-interest rate subprime mortgages. Because many of these borrowers could afford the monthly payment only at the original teaser rate, the resetting of interest rates after the expiration of those rates thus resulted in a huge jump in loan defaults, sending shock waves across global financial markets as the value of financial instruments containing subprime loans began to plummet.

Even though the total amount of subprime mortgages is only about \$1 trillion, because they were chopped up and securitized with other financial assets, the total amount of financial instruments containing some elements of subprime mortgages may amount to many trillions. No one seems to know exactly the total amount of financial instruments that are contaminated by these securitized mortgages. Moreover, the default rate of prime mortgages is also increasing rapidly, suggesting that many prime borrowers also went out of their way to buy houses during the bubble. Even though the default rate of the prime mortgages is only about one-quarter of those for the subprime, because the former market is many times bigger than the latter, the impact on the banking and financial system is no smaller.

To make matters worse, because of the complexity of these securities, most investors were unable to understand their exact risk characteristics, and were relying almost entirely on rating agencies for guidance. When the rating agencies began to downgrade these papers en masse, the whole market collapsed, destroying thousands of bank balance sheets in the process. The apparent unreliability of rating agencies then affected the value of many other complex structured instruments, including those that do not contain subprime components. The complexity of these instruments also made it difficult for the bargain hunters to come in, because they too will face the difficulty of selling the paper, except to the extremely limited number of investors who actually understand these instruments.

Special characteristics of the subprime-driven balance sheet recession

The subprime fiasco contains certain peculiarities that are not found in past balance sheet recessions. For one, the problem originates with the household and banking sectors, rather than the corporate sector. If the problem were centered in the corporate sector—as was the commercial real estate bubble Japan experienced, for example—forecasting would be relatively easy. Balance-sheet problems lead companies to pay down debt as quickly as possible, because being declared technically insolvent is a death sentence for a business. This is what happened to Japanese companies over the past fifteen years and to U.S. and German companies after the IT bubble.

But things are different in the household sector. If a family buys a house and the house's value subsequently drops sharply, the household may be technically insolvent if the balance on the mortgage exceeds the new, lower value. But there is no immediate problem as long as the family can continue paying the mortgage. The bank that lent to the household is interested only in receiving the monthly payment, and is unconcerned about whether the household might have a negative net worth. As long as employment and income continue to grow, therefore, households will be able to keep their homes, preventing a broad sell-off and a sharp drop in housing prices. The negative wealth effect of a fall in home prices on households that can afford their monthly mortgage payments,

such as those with fixed-rate mortgages, will therefore be gradual and drawn out.

For those who can no longer afford to make the monthly payment, such as borrowers facing the expiration of teaser rates on their adjustable-rate mortgages, there will be no choice but to default. The problem will then be shifted, by way of foreclosure, to the banks, which will have to take the hit in the form of more nonperforming loans (NPLs). More NPLs, in turn, mean lower capital adequacy ratios for the banks. That, in turn, is likely to bring about a credit crunch as banks are forced to reduce lending to meet capital adequacy ratios. Moreover, when the foreclosed houses go on sale, prices in the neighborhood will also suffer, with a potential snowball effect. With nearly two million people in this category, a sharp increase in defaults could have devastating consequences for the supply and price of housing.

For the financial sector, the collapse in the value of financial instruments containing subprime components to a fraction of their original values has already generated huge losses. The spread of the contagion to structured instruments not containing subprime components made the losses even worse. The financial institutions' predicament has already led to a credit crunch in Europe as well as in the U.S.

Revisiting the collapse of Japan's bubble in the 1990s

How will the subprime crisis unfold? If it follows the same process as Japan did after the bursting of the Heisei bubble, it will probably go something like this:

1. Immediately after the bubble bursts, nearly everyone will assume that the resulting economic weakness is a short-term phenomenon that will cause some pain in a few quarters in a few industries before things return to normal. This sort of complacency is common in the immediate aftermath of a bubble, because bubbles almost always burst when the economy is at its most prosperous. Everyone is still in denial at this point. For Japan, this stage lasted from 1990 to 1992 when the economy was still quite strong.

2. Once the bubble's collapse starts to hit the balance sheets of individuals and businesses (especially banks in the U.S.), however, people will grow more cautious, and adopt a defensive stance. If this newfound defensiveness prompts individuals to increase savings and banks to increase foreclosures and auctioning off of houses, the broader economy will experience a fallacy of composition problem, and the deterioration in domestic demand and asset prices will start to snowball. In Japan, this stage started around 1993 when people started talking about "balance sheet scare syndrome" mentioned in Chapter 1.
3. Meanwhile, individual banks rushing to strengthen their capital ratios by cutting down their lending will not realize that the broader economy is falling into a fallacy of composition, and they will continue to act based on the belief that their efforts will lead to stronger capital asset ratios. The harder these banks work, the worse the credit crunch and the macroeconomy will get, causing the finish line they are rushing toward to recede into the distance.
4. The pain of the weakening economy reaches a point at which the public is willing to contemplate bailing out the lenders to end the credit crunch by injecting capital into undercapitalized banks. In the case of Japan, this level of pain was reached in late 1997, which prompted the government to inject capital in 1998 and 1999.

The government may also implement a strong dose of fiscal stimulus, borrowing and spending the excess savings of the private sector. In Japan, this policy was in place since 1993, although stimuli were never applied preemptively, and were almost always behind the curve.

Fiscal spending and capital injection will put an end to the fallacy of composition and allow the economy to regain stability. But it should be noted that even though the above government actions can stabilize the economy, a self-sustaining recovery will not happen until the private sector's balance sheets are repaired, and its "debt rejection syndrome" is overcome. Japan is still

struggling with the syndrome today, seventeen years after the bursting of the bubble

U.S. now bogged down in aftermath of bubble collapse

In the context of the four-stage process shown, stage 1 corresponds to the events of summer and autumn of 2007. The Fed's declaration of its return to a neutral bias after cutting rates in October 2007 is a classic example of the psychology operative during this phase.

But as bank balance-sheet problems became more severe, market doubts and fears grew, and attempts to sell problem assets worsened the situation by driving down prices. The rising losses being announced by banks are an indication that the economy was already in stage 2 by the end of 2007. Bernanke's speech on January 10, 2008, in which he announced that the Fed "stand ready to take substantive additional action as needed" indicates that the "denial" period is finally over for the Fed.

Although strong banks such as Citibank and UBS have chosen to replenish their capital by tapping non-Western sources, such as Arab and Asian sovereign wealth funds (SWFs), the vast majority of 8,560 banks in the U.S. have no such access. Those banks with no easy access to external capital will be forced to scale back lending. With thousands of banks in this latter category, their actions will adversely affect the broader economy (stage 3) by aggravating the downturn in residential and commercial real estate.

Moreover, Citibank is paying 11 percent interest on the "capital" infusion, and UBS 9 percent. In effect, both are paying higher rates than subprime borrowers. To make these payments, these top-tier banks will also go through serious restructurings, which could have adverse impact on the economy and the financial market. That top-tier banks such as Citibank and UBS were able to obtain capital only at these elevated interest rates is proof of how serious the current situation is. It also highlights how difficult it will be for thousands of non-top-tier banks to obtain capital.

This credit crunch, which is a special characteristic of a balance sheet recession driven by weak *bank* balance sheets, will not go away until banks are fully capitalized again. The process of replenishing bank capital through earnings, however, will take a long time, especially when the economy is in a recession. A central

bank infusion of liquidity cannot end a credit squeeze either: only government injection of capital can do that. But the government cannot act until public's opposition to bailing out "stupid, greedy, and overpaid" bankers is overcome.

In a complete reversal of roles, Finance Minister Fukushima Nukaga of Japan urged U.S. Treasury Secretary Hank Paulson to use government funds to recapitalize U.S. banks at the G7 meeting held in Tokyo in February 2008. Nukaga urged what the U.S. officials were pressing the Japanese to do back in the mid-1990s to fix the Japanese banking problems. Paulson, however, could not commit the U.S. government to do anything in public apparently because of the fear of political backlash against government bail-out of the "rich, fat" bankers. And that was exactly the same political constraint Japanese officials faced back in mid-1990s.

Paulson is probably aware that the late former Prime Minister Kiichi Miyazawa had proposed in 1992 that the government use public funds to fix the Japanese banks. The massive public outcry against this proposal led by ignorant media, however, totally destroyed Miyazawa's initiative. Indeed the outcry was so bad that no politician could talk about the bank rescue packages for five full years, until late-1997 when the credit crunch became so bad (Exhibit 2-3) that even the media had to concede that something had to be done. Given such precedent, Paulson probably believes that too quick of a move by the government may actually backfire and make what is possible impossible.

This means the U.S. economy and its people will have to suffer the credit crunch until the level of pain reaches the point where the capital injection becomes politically acceptable. At that time, someone is likely to argue that if U.S. banks are going to pay such high yield to Asian or Middle Eastern SWFs, the U.S. government might as well take their place so that the income transfer will be all within the U.S. The track record indicating that the U.S. capital injection in 1933 and the Japanese capital injection in 1999 did not cost tax payers anything should also make the proposal easier for the public to swallow. As can be seen in Exhibit 2-3, March 1998 injection in Japan stopped the debilitating credit crunch from getting worse, and March 1999 injection allowed the banks to resume their role as financial intermediaries.

The Japanese experience also indicates that conditionality for capital injection, which many pundits and politicians will invariably insist on in order to "fix" the banks so that they will

not make the same mistake again, should be kept to a reasonable level. This is because the two goals of reforming the banks and ending the credit crunch often contradict with each other. Indeed many banks would prefer to reduce lending rather than accept government money with all the strings attached. But if the banks refused to take the money, the policy initiative to end the credit crunch will strike out, and the economy will suffer.

Japan learned this lesson the hard way: when the government offered capital injection in early 1998 with stringent conditionality insisted by many observers including the U.S. Treasury, not a single bank applied for injection. Many bank analysts and observers from home and abroad, including Heizo Takenaka, argued that banks should not take the money but instead cut their lending to make themselves more lean and mean. Even though those recommendations were correct for individual banks, it spelt a disaster for the macroeconomy already suffering from a debilitating credit crunch. In the end, the government had to drop the conditionality in order to save the economy. The point is that trying to achieve two (contradictory) goals with one tool, capital injection, is irresponsible policy. Fixing the banks should be left to the bank regulators, while the policy of capital injection should be focused on the macroeconomic urgency to end the credit crunch.

In the meantime, some European housing markets are showing signs of weakness, especially those in Spain and the U.K. Due to the housing boom that boosted Spanish GDP growth over the past several years, the bursting of the bubble there is likely to have a major impact on the economy going forward. Bubbles bursting on both sides of the Atlantic when financial institutions are already so weak on both sides also means that the utmost care is needed on the part of policymakers to keep the world economy from falling into a 1930s-like global fallacy of composition.

U.S. housing market kept up by government financial institutions

At present, the only government body working to resolve this fallacy of composition problem in the U.S. is the Federal Home Loan Bank (FHLB) system, which has managed to keep the U.S. housing market functioning by lending hundreds of billions of dollars to financial institutions during the second half of 2007 alone.

In other words, public funds—provided by the FHLBs, Fannie Mae, and Freddie Mac, among others—are what is propping up the U.S. housing market. If the market had been relying solely on the private sector, it might well have collapsed some time ago. It is another irony that the FHLBs, created during the Great Depression in the 1930s, are playing a critical role in keeping the twenty-first-century housing market afloat.

But this just reflects the seriousness of the situation. Given the need for banks to cut back on lending, and raise their capital ratios, conditions are unlikely to improve anytime soon.

U.S. repeating Japan's pattern of bad loan disposals

When Japan's banking sector faced a mountain of bad loans some years ago, the problem was largely solved within Japan's borders, with the exception of a few banks that sold shares in international markets.

At the time, the U.S. strongly criticized Japan's cautious approach, and argued that banks should proceed quickly to write off their bad loans from the balance sheets, and asset prices should be left to fall until the markets cleared. Domestically, their arguments were echoed by Heizo Takenaka. Now that the shoe is on the other foot, however, the U.S. under Secretary Paulson is doing precisely what it once criticized Japan for doing. This contradiction between what the U.S. demanded from Japan ten years ago and what Secretary Paulson is attempting to do now has also been noted by Martin Wolf in the pages of the *Financial Times*.²

What Japan has done and what the U.S. government is trying to do now are both appropriate for the problems they faced, while the U.S. criticism of Japan in the past was totally misguided. It was misguided because those commentators were not aware that there are actually four types of banking crises and four different ways of dealing with them, depending on whether there is any demand for funds and whether the problem affects the whole of the banking system or only part of it. They are:

- Type (I): A localized crisis with demand for funds.
- Type (II): A systemic crisis with demand for funds.
- Type (III): A localized crisis with no demand for funds.
- Type (IV): A systemic crisis with no demand for funds.

The first two happen in an economy in the *yang* phase, and the last two happen in an economy in the *yin* phase.

These are shown in Exhibit 7-1.³

Exhibit 7-1. Four types of banking crises and four ways of dealing with them

		<i>Yang</i> Normal demand for funds	<i>Yin</i> Weak or non-existent demand for funds
Banking Crisis	Ordinary	(I) Quick NPL disposal Pursue accountability	(III) Normal NPL disposal Pursue accountability
	Systemic	(II) Slow NPL disposal Fat spread	(IV) Slow NPL disposal Capital injection

On this basis:

- The 1989 S&L crisis falls into type (I).
- The Latin American debt crisis of 1982, the nationwide credit crunch in the U.S. between 1991 and 1993, and the Nordic banking crisis in the early 1990s fall into type (II).
- Japan before 1995 (for example, problems at two credit cooperatives) falls into type (III).
- Japan since 1996, Taiwan since 2000, the U.S. Great Depression of the 1930s, and U.S. and U.K. subprime crisis since 2007 fall into type (IV).

Viewed in this way, the *only* category in which rushing to dispose of NPLs would be the best approach is type (I). In all other categories, a cautious approach would produce better results. In types (II) and (IV) systemic crises, attempting to sell NPLs when there are hardly any buyers runs the risk of pushing down asset prices even further, which could lead to a much weaker economy and the emergence of even more NPLs. In other words, rushing to dispose of NPLs only “destroys value,” to use Stefan Ingves’s term,⁴ and makes the situation much worse. Indeed, the U.S. dealt with its type (II) NPL problems at a slow and cautious pace.

There is no such danger of snowballing problems in type (III), but there is still no real point in rushing to dispose of NPLs, because they do not constitute the main impediment to economic growth. There is certainly no reason to use taxpayers' money to speed up the disposal process in a type (III) crisis.

Meanwhile, in type (II) systemic crises, in which there are still demand for funds, the authorities can strengthen the banks by providing a *fat spread*—in other words, lowering the rate at which the central bank supplies liquidity to the banks while allowing them to keep their lending rates high. Indeed, this is exactly how the U.S. resolved its 1991–93 nationwide credit crunch noted in Chapter 1. Although this is an extremely unfair method because it involves a transfer of income from deposit holders to the banks, it is politically expedient in that the government does not need to use public funds.

In type (IV) cases, however, insufficient demand for funds from the private sector makes it impossible for the central bank to use the fat-spread solution. In this type of crisis, the government needs to step in with capital injections in the event that further instability emerges. This is why the U.S. went for this option in 1933, as did Japan in 1998 and 1999. Because the credit crunch is likely to become serious in the current subprime crisis, U.S. authorities must also consider this remedy.

In the U.K., authorities trying to find private entities willing to take over the operations of Northern Rock had to give up its search in February 2008 after many months and proceed with its nationalization. The fact that no viable offer from the private sector emerged is a strong indication that this is a systemic crisis where all institutions are affected and that none of them have the capacity to help others. This is exactly what happened in Japan in mid-1998, when the Long-Term Credit Bank failed. In spite of the desperate search for merger partners by the government, no foreign or domestic investors raised their hands. In the end, the government had to nationalize the bank. Indeed it was long after the government's massive capital injection and public works programs stabilized the Japanese economy and banking system that foreign investors presented themselves to purchase the bank.

Although many pundits and investment banks push for a "market solution" to a banking crisis on the assumption that

private sector investors are always there, such solutions work only for type I and III crises. For type II and V systemic crises, no private sector investors, including investment banks, will present themselves to purchase those assets, and the government will have to take over the operations of failed institutions until stability returns to the banking system and the economy.

Approach to subprime problems resembles Latin American debt crisis, but also differs in some ways

Even when Japan faced a barrage of U.S. criticism a decade ago, former Fed Chairman Paul Volcker and others who really understood systemic banking crises frequently warned that it would be a mistake for Japan to rush ahead with bad-loan disposals when so many Japanese banks faced the same problem. These people knew that Japan was experiencing a type IV banking crisis.

In an interview with *Toyo Keizai* magazine on June 23, 2001, Mr. Volcker actually argued that Japan should introduce “speed limits” on banks’ write-offs of NPLs. This comment was probably based on the former chairman’s experience during the 1982 Latin American debt crisis, which, as did Japan’s problems, threatened the entire U.S. financial system. Indeed, the unfolding subprime crisis has many things in common with the Latin American debt crisis.

The Latin American debt crisis occurred because hundreds of U.S. banks became too greedy, and made huge loans to Latin American dictators that ultimately went bad. The resultant crisis virtually wiped out the capital of many if not most major U.S. banks, and made it impossible for the authorities even to discuss the problem in public. Consequently, it took more than a decade to clean up the resulting mess.

The subprime crisis is similar in that it involves so many U.S. financial institutions and was triggered by their reckless behavior. Once again, the public is vehemently opposed to using tax money to rescue the lenders, which means that a great deal of time will be needed to resolve the problem.⁵

In the earlier crisis, however, there were not so many SWFs, and banks were forced to replenish capital using profits from their daily operations. This time, some banks will be able to avail themselves of financing from SWFs in Asia and the Middle

East, as Citibank, UBS, and a host of others have already done. Consequently, the process of rebuilding capital for some banks may not take as long as it did in the earlier crisis.

With U.S. economy slowing, current problems may be harder to fix than Latin American debt crisis

On the other hand, the Latin American debt crisis had almost no effect on the U.S. domestic economy, aside from some weaknesses in U.S. exports to the region. This time, however, the domestic economy faces major problems—the housing market, for example, remains buried under huge unsold inventories.

Making the situation worse is the fact that banks have become much more reluctant—and are likely to become even more reluctant—to lend against housing and real estate. This will limit new purchases, and cause the housing and real estate downturns to drag on longer than they otherwise would have. This trend is likely to gain momentum in Europe as well as the U.S.

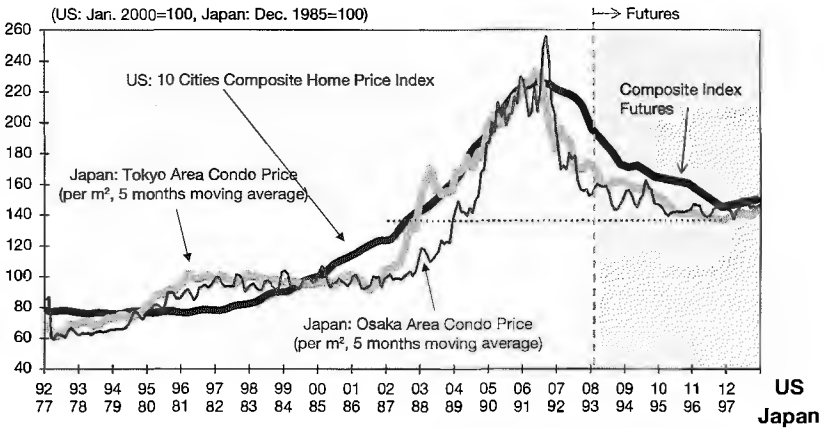
We are already seeing dark signs in U.S. commercial real estate, which until recently was quite healthy. To the extent that the robust commercial real estate sector has been able to absorb surplus materials and labor from the slumping residential construction industry, the recent downturn in commercial real estate could have severe implications for the U.S. construction industry and GDP.

With this slowdown in the real estate economy likely to weigh on earnings, overcoming the subprime crisis may be as big a challenge for many U.S. banks as the Latin American debt crisis was in the 1980s.

Although I do not think the U.S. recovery will take the fifteen years Japan took to climb out of the Great Recession, the reduced functioning of the financial sector is likely to continue for several years, unless governments in Europe and the U.S. implement the capital injection measures noted in stage 4.

Housing futures market predicting further fall in house prices

In addition to the capital-deficiency problem of financial institutions, the real side of the economy is faced with a housing

Exhibit 7-2. Futures point to falling U.S. home prices well into 2010

Source: Bloomberg, Real Estate Economic Institute, Japan, S&P, "S&P/Case-Shiller® Home Price Indices", as of Mar. 25, 2008.

glut. How this glut is resolved depends on what happens to housing prices. If the decline is mild, the U.S. economy might be able to weather it. If prices fall sharply, however, the U.S. might be in for a nasty balance sheet recession. The housing-price futures that have been trading on the Chicago Mercantile Exchange since 2006 indicate that market participants themselves predict that home prices will fall more than 20 percent by 2010 (Exhibit 7-2). Although the futures market is by no means an infallible forecaster, the forecast could prompt more people to postpone buying a house and thus worsen the housing glut. The same chart may also prompt those who are struggling with mortgage payments to abandon their homes, because it may be cheaper to default now, and buy a house three years later than to try to service an existing mortgage.

The same Exhibit also shows what actually happened to Tokyo and Osaka area house prices during Japan's bubble and its aftermath. It is interesting to note that the rise in Tokyo house prices before 1991 matches that observed in the U.S. before 2006. Although one can always find reasons to suggest that U.S. house prices will fall more or less than the Japanese example, that so many financial institutions were weakened by this fiasco and that the inventory of unsold homes is still high suggest that the U.S. economy could be in for a hard landing. If this is matched with

a bursting of European (and Chinese?) housing bubbles, we may really enter a nasty world, if not handled properly.

We must also remember that a key factor supporting the U.S. housing bubble was the development of a host of innovative financial products, including subprime interest-only and negative-amortization ("neg-am") loans, which offer low initial payments in return for sharply higher payments a few years later. Some have estimated that a third of all homebuyers in the past few years have relied upon these products. This point is important because it was also the development of new financial products that boosted present demand at the expense of future sales in the years leading up to the Great Depression.

The differences between Greenspan and Bernanke

Fed Chairman Ben Bernanke has already been criticised several times in this book because he appears to overestimate the power of monetary policy. His confidence in monetary policy is likely push him to cut rates more aggressively than his predecessor would have done in response to a serious threat to the U.S. economy. But if the Japanese example is any guide, this easing may not have the desired impact.

A lack of responsiveness to interest-rate cuts is a salient characteristic of a balance sheet recession. As explained in Chapter 4, asset prices tend to stop responding to interest-rate cuts once a bubble bursts. This happens because people who were burned in the bubble by ignoring discounted future cash flow (DCF) value and chasing asset prices higher come to focus almost exclusively on DCF value, partly out of contrition for their former recklessness. After all, a bubble can develop only when asset buyers ignore cash flow concerns and chase prices higher. After the bubble bursts, those same investors vow never to ignore DCF values again. And those who honor their vows will not buy assets until prices fall back to the discounted present value of those assets' future cash flows. In short, housing prices may not respond to a Fed rate cut until they fall first to their DCF values.

In Japan, for example, real estate values, including residential real estate, did not respond even though the Bank of Japan slashed short-term interest rates from 8 percent to zero. The question now is whether this phenomenon will be repeated in the U.S. If

investors decide that housing prices are still substantially higher than DCF values, rate cuts will not be effective, and a fairly hard landing becomes a possibility.

If it becomes evident that monetary policy is losing its effectiveness, the government must not hesitate to mobilize additional fiscal policy. When the collapse of the IT bubble left the U.S. economy in this state in 2000, Greenspan surprised everyone by reversing his position and lending support to President Bush's tax cuts. A year later, just after the 9/11 terrorist attacks, he surprised people again by urging the White House to implement fiscal stimulus worth 1.0 percent to 1.5 percent of GDP. The Bush administration listened to the Fed chairman, and this heavy fiscal stimulus, combined with the housing bubble sparked by Greenspan's low interest rates, enabled the U.S. economy to overcome the deflationary pressure resulting from the IT bubble collapse and the events of 9/11.

Bernanke, on the other hand, is likely to try to solve the problem by aggressive monetary easing, given his belief that any problem can be solved with monetary policy. (He may even order the Fed to buy tomato ketchup, which is what he urged the Bank of Japan to do to turn the Japanese economy around.)⁶ But the actual situation is far worse for Bernanke today than for Greenspan in 2000–01. Greenspan at that time had the housing market, the most interest-rate-sensitive sector of the economy, to stimulate with low interest rates. Bernanke in 2008, however, has no interest-sensitive sector to stimulate with low interest rates. Indeed, his situation is much like the position of the Bank of Japan after the bursting of *both* the stock market and real estate bubbles in early 1990s.

Although academic economists may be putting all their eggs into the monetary basket, it is encouraging to note that U.S. politicians and even the IMF are pushing for fiscal stimulus. Both Congress and the White House moved quickly to enact a \$168 billion tax cut in February 2008. Such stimulus will no doubt help the U.S. economy.

It was also extremely encouraging to note that the IMF Managing Director Dominique Strauss-Kahn argued in favor of fiscal stimulus not only for the U.S. but for the world on January 27, 2008, at Davos. The dramatic shift in the IMF stance from its perennial insistence on fiscal consolidation to pushing for fiscal

stimulus to avert the global economic meltdown was so shocking that the *Financial Times* called the shift a volte-face. That the IMF is arguing for *global* fiscal stimulus measures is extremely important because it is the only institution which is in the position to alert the world about the danger of global fallacy of composition.⁷

Additional fiscal measures needed

However, two features of the ongoing fiscal debate in Washington are worrisome. One is the emphasis on tax cuts, which under ordinary circumstances would be the right thing to do. But during a balance sheet recession, a significant portion of the cut will be saved or used to pay down debt, including mortgage debt. Moreover, the rise in house prices until 2006, which substituted for savings in many American households, has now reversed. This means that many families may be feeling the need to increase savings, in some cases substantially. In this situation, government spending is far more effective in increasing aggregate demand than a tax cut.

The second concern is the emphasis on the temporary nature of the fiscal measures. This was put forward to minimize the damage fiscal stimulus may bring to the long-term fiscal health of the government. But in a balance sheet recession, the headwind will not abate until household and bank balance sheets are repaired. Given the size of the problem, there is absolutely no reason to believe that those balance sheets will be repaired with just one pump-priming action by the government. In the 1992–93 period, the Japanese government argued exactly the same way Washington is arguing today when it implemented its first fiscal stimulus, but in the end it took Japan fifteen years to climb out of the recession.

It took that long because at that time, there was no concept of balance sheet recession in the economics profession, and the fiscal stimuli were applied intermittently and almost always “behind the curve.” In other words, they were applied only after the effect of the previous stimulus had expired, and the deflationary pressure was allowed to weaken the economy. This on and off approach ended up increasing the cumulative deficit by at least ¥100 trillion, and lengthened the recession unnecessarily by as much as five years, as mentioned in Chapter 4.

Now that we have a much better knowledge of how a balance sheet recession operates, the U.S. has no reason to repeat the same mistake made in Japan. It is hoped, therefore, that the government implements a seamless fiscal stimulus package centered on government spending over the next couple of years, while it prepares a program of capital injection to the banks that can be put in place as soon as it has become politically feasible to do so.

In the meantime, sharp interest rate cuts by the Bernanke Fed are likely to push the dollar lower which should help the U.S. expand its exports and reduce its imports. Indeed this exchange rate effect on exports may be the only positive impact of the monetary easing. Although this increase in exports is not likely to be sufficient to offset all the negatives coming from the banking and housing sectors, because the U.S. is running a huge current account deficit, Washington cannot be blamed for bringing its exchange rates down to improve its trade balance, as mentioned in Chapter 4.

If the U.S. economy stalls and the dollar weakens with it, it is hoped that Japan, together with other current-account-surplus nations in Asia and elsewhere, will have the courage to follow the IMF's recommendation to stimulate domestic demand by mobilizing fiscal policy. This action to boost domestic demand should be done for the sake of both Japan's economy and the global economy, particularly if Japanese tax revenue and household savings are growing substantially faster than private-sector demand for funds, as discussed in Chapter 2.

2. The Chinese bubble

Another potential candidate for balance sheet recession in the near future is China, which is now experiencing many asset-price bubbles. Real estate prices, for example, are surging in major cities such as Shanghai, Beijing, and Qingdao. Share prices have also risen sharply.

It should be remembered, however, that similar (if slightly lower) rates of increase for real estate prices were also observed in Japan and other Asian countries in the past. In Japan, for example, GDP grew at an annual rate of 9.8 percent in real terms and 15.6 percent in nominal terms during the period of high

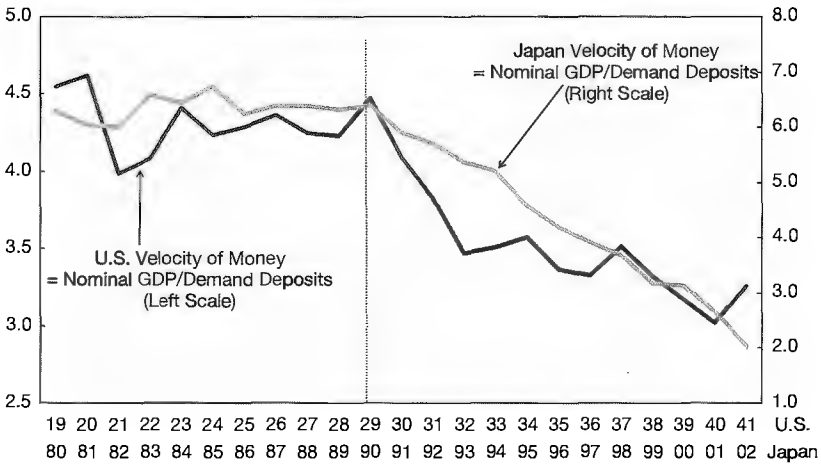
economic growth from 1955 to 1970. Home prices also rose at an annualized rate of 21.4 percent⁸ during this period. As does China today, Japan had a fixed exchange rate, which had been set at ¥360 to the dollar under the Bretton Woods monetary regime. As exports surged and the economy expanded, land prices appreciated sharply. Similar phenomena were also observed in Taiwan and other Asian nations.

The Chinese authorities are well aware of the damage a bubble can cause, and have tried to tackle the problem from a variety of angles. Whereas it was previously possible to obtain a home mortgage loan with almost no downpayment, for example, prospective buyers are now required to put up a substantial amount. The government is likely to maintain and increase these micro-level tightening measures until its goal of stability is reached.

Turning to the stock market, the Chinese authorities have raised transaction tax rates on shares to cool the market. Although this tax will not solve the fundamental imbalances in the Chinese economy that are driving these bubbles, the authorities may succeed in slowing things down if they raise the tax rate on share transactions enough. This is because asset-price bubbles are typically accompanied by a rapid increase in trading volume or churning. The churning, in turn, gives market participants a false sense of security that those assets are very liquid, and that they can always get out if things start to go wrong. By raising the cost of churning, a higher transaction tax can be helpful in restraining markets with high churn rates.

More generally, the first thing policymakers typically look at when they try to rein in bubbles is to see whether the money supply is out of control. Because no (eventually destructive) bubble can start without funding from financial institutions, they typically examine growth in money supply relative to GDP. Interestingly, the ratio of money supply to GDP or the velocity of money in both the U.S. before the Great Depression and Japan before the Great Recession remained remarkably stable. These are shown in Exhibit 7-3. This may have given central banks a false sense of security that monetary conditions were not excessively loose. That the general level of prices on both occasions was also stable might have added to this sense of complacency.

Exhibit 7-3. Money supply to GDP remained remarkably stable during the bubble



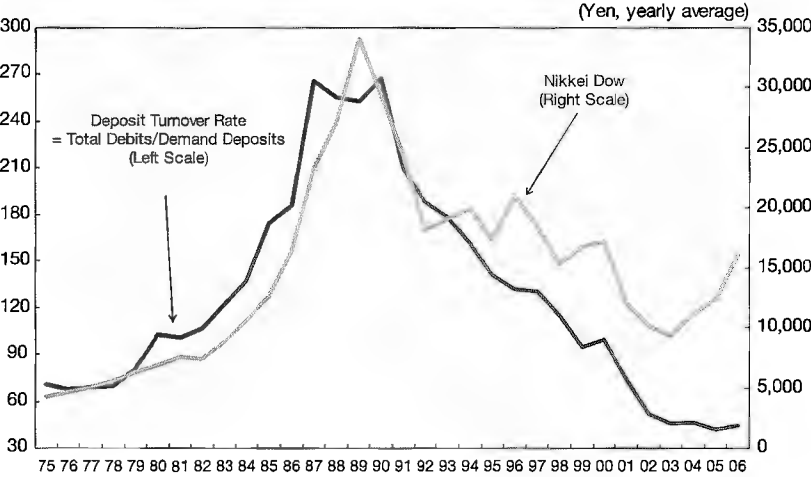
Sources: Board of Governors of the Federal Reserve System (1976) *Banking and Monetary Statistics* Vol.1, p. 254, U.S. Bureau of the Census (1975) *Historical Statistics of the United States* p.224, Bank of Japan, and Cabinet Office, Japan.

The size of the money supply relative to GDP may be a good indicator of overall pressure on *general prices*. But it is a poor indicator of the pressure on *asset prices*. This is because trading in assets is not included in GDP. To see the pressure on asset prices, we need to look at the total amount of monetary transactions, because a rise in asset prices, especially financial assets, is typically associated with a huge increase in trading volume (churning).

A good indicator of total monetary transactions is *deposit turnover*, which is obtained by dividing total withdrawals from the banking system by the average value of demand deposits in the system. For the U.S., this data is available directly from the Federal Reserve. For Japan, the numbers can be obtained by dividing the “payments” entries of demand deposits by the amount of demand deposits, both taken from the Bank of Japan’s entry on “Amounts Outstanding of Deposits by Depositor.”

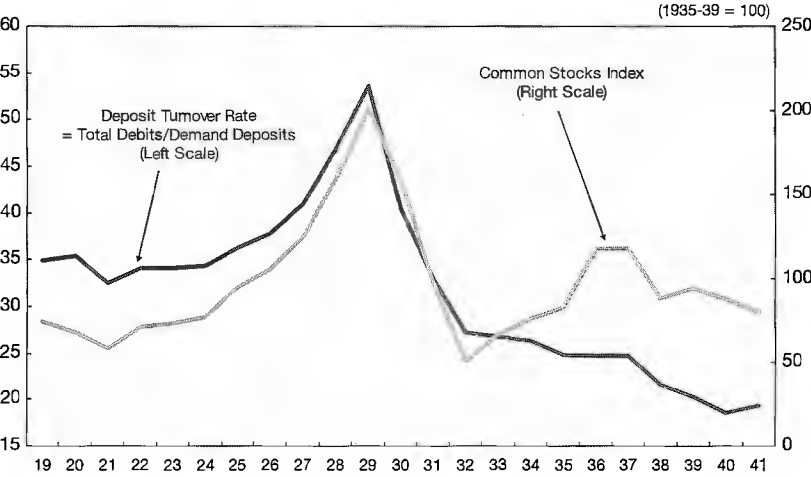
Increasing turnover means that the same bank deposit is changing hands faster, thereby supporting more transactions per period. If deposit turnover is increasing much faster than GDP or the velocity of money, then the trading in assets must also be increasing, and vice versa.

Exhibit 7-4. Increase in deposit turnover coincided with Japanese stock market bubble



Sources: Bank of Japan, Nihon Keizai Shimbun

Exhibit 7-5. Increase in deposit turnover coincided with 1929 U.S. stock market bubble



Sources: Board of Governors of the Federal Reserve System (1976) *Banking and Monetary Statistics Vol.1*, p. 254 and 479.

When one looks at this measure for both Japan during the late eighties and the U.S. before the Great Depression, one sees very rapid increases in deposit turnover as the respective

bubbles reached their peaks, followed by sharp declines after the bubbles burst. This is illustrated in Exhibit 7-4 for Japan and Exhibit 7-5 for the U.S. In the Japanese case, the same bank deposit supported double the transactions at the peak of the bubble in 1990 compared with the “non-bubble” period of 1985. In the U.S., the figure was 80 percent higher in 1929 than in 1925. Turnover then fell to one-sixth of the peak in Japan and one-third in the U.S.

Such a huge fluctuation in deposit turnover means it is not enough to look only at money supply or its velocity, because the same money supply can support vastly different levels of transactions. This is particularly relevant in measuring pressure on asset prices as opposed to general prices.

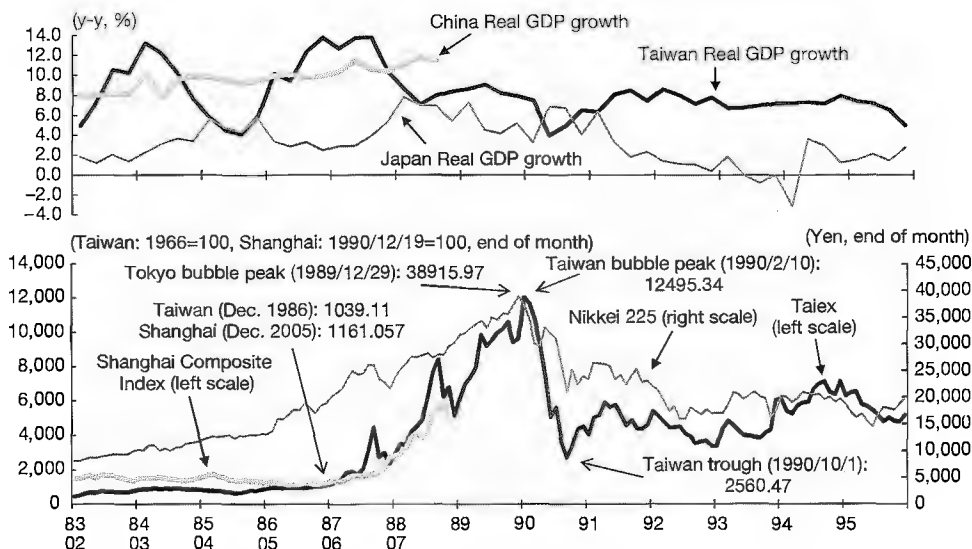
To the extent that deposit turnover correlates closely with asset prices, therefore, China’s decision in June 2007 to impose a transaction tax, or Tobin tax, on share trading may be one way to dampen the stock market speculation there. The imposition of a transaction tax should reduce turnover, and force people to think twice before investing.

The contrast between Taiwanese and Japanese bubbles

In fighting bubbles, the monetary authorities should also make sure that involvement by financial institutions and corporations is kept to the absolute minimum. This is because a bubble financed entirely by cash is unlikely to result in a serious balance sheet recession or credit crunch later on.

This was most clearly demonstrated following the Taiwanese stock market bubble of 1987–90, when share prices rose elevenfold and then dropped 80 percent in just four years. In spite of the collapse, there was hardly any impact on Taiwan’s GDP, which continued to grow about 6 percent per year (Exhibit 7-6). This was made possible by two factors.

First, the money that entered the stock market was largely from personal savings or what Japanese would call *hesokuri*. The word *hesokuri* means savings kept secret from spouses or family members. When stock market investments made with these funds turn sour, those who incurred them cannot talk about the losses because that would reveal their secret.

Exhibit 7-6. GDP growth rates and stock market bubbles in Taiwan and China

Sources: Bloomberg, Directorate-General of Budget Accounting and Statistics, Executive Yuan, R.O.C and Taiwan Stock Exchange, Nihon Keizai Shimbun, Cabinet Office, Japan.

Second, all major banks in Taiwan at that time were owned and operated by the government, which ran them extremely conservatively. As a result, very little money from financial institutions entered the stock market, either directly or through the corporate sector. As a result, the bursting of the bubble in 1990 had virtually no impact on the balance sheets of banks or corporations.

This was in sharp contrast to the Japanese bubble of the late 1980s, which involved a huge number of financial institutions and corporations. As a result, millions of corporate balance sheets were damaged when the bubble burst, and Japan suffered fifteen years of balance sheet recession.

The Chinese stock market bubble probably falls somewhere between the Japanese and Taiwanese cases in that a large amount of individual savings and *hesokuri* have combined with undisclosed corporate funds (i.e. corporate *hesokuri*) to produce the bubble in share prices. That China suffers from poor corporate governance made it easy for some corporate managers to play the stock market.

Even though bubbles themselves are difficult to prevent, the damage they cause when they burst can be minimized by raising the cost of speculative transactions and keeping financial institutions and corporations away from the bubble. The question is whether government leaders have the will and the means to do so.

The problems facing China's leaders

Chinese policymakers are rightfully concerned about asset-price bubbles and their aftermath, the balance sheet recession. Many have read my previous book, *Balance Sheet Recession: Japan's Struggle with Uncharted Economics and its Global Implications*, and are studying how Japan used fiscal policy to keep the economy going in spite of the massive fall in asset prices after the bubble burst, as indicated in Exhibit 1-7.

But today's fourth-generation leaders were not elected democratically, did not participate in the revolution, and have not achieved major successes on the economic front. As a result, they constantly face questions about their legitimacy. That has made them extremely cautious and prevented them from taking risks.

Someone with Deng Xiaoping's charisma and achievements could easily decide to move exchange rates or tax rates 10 percent in one direction, and, if that did not work, move 5 percent back. But none of the current leaders could afford such a mistake. A senior policymaker once told me that: "Ordinary Chinese do not think we are special—they see us only as lucky people who happened to be at the right place at the right time, caught Deng Xiaoping's eye, and were elevated to power."

When setting policy, therefore, these policymakers seek the assurance that anyone in their situation would have done the same. On the issue of renminbi revaluation, for example, there are alternative policies that would also reduce the trade imbalance with the U.S.—setting targets designed to boost imports from the U.S., say, or lowering the VAT rebate on exports. Given these alternatives, Chinese officials can revalue only if it is concluded that raising the currency's value would be a better option for China than all other alternatives. This kind of decision-making process takes time, particularly when the policy shift is a major one, because the leaders cannot risk a mistake.

The officials' need to provide theoretical justification for their decisions sets them apart from past generations of Chinese leaders, and explains why academics have such high social standing in China today. Academics are critically important to the government for their ability to offer advice, design and run quantitative models to justify that advice, and conduct empirical studies. But their involvement also creates significant delays in the policymaking process.

Unfortunate side effects of closing down state-owned enterprises

In a sense, a root cause of China's trade imbalance was the destruction of the nation's state-owned enterprises. The people who worked for these enterprises had enjoyed a certain degree of social security, reducing their need to save.

But this security was lost when the government privatized these enterprises, or put them out of business. After a period of struggling to get by, the employees have now found new jobs, and regained a measure of stability in their lives. They also have reasonable incomes. But without the pensions or health insurance that were part of the original communist system, they must now save for themselves. Their savings, which now account for nearly 40 percent of national income, increase the gap between domestic demand and domestic production, forcing companies to rely on exports and further widening the trade gap.

To rectify this situation, the government must establish a proper social security system as soon as possible. But this is not something that a developing nation with more than 1.2 billion people can do at the drop of a hat. Even if it could, it would take time for people to learn to trust the system, and change their savings behavior. That even taxpayers in developed nations like Japan and the U.S. have concerns about the solvency of their social security systems suggests that Chinese leaders are indeed faced with a heroic task.

More economic freedom, but election must wait

Another major problem facing the country—and one that is directly linked to the legitimacy of the current government—is the

income disparity between the rapidly growing coastal areas and the interior and rural regions. The legitimacy problem itself can be solved with elections because the elected representatives will then be able to claim that they were chosen by the people. China's senior leaders understand that, ultimately, this is the only way the legitimacy issue can be resolved.

The problem is that, at present, only the 400 million people living along the coast, and not the 800 million in the interior, have benefited from economic reforms. Thence the income gap.

If elections were held today, the 800 million who are unhappy with the current system would devour the 400 million who have prospered, causing the nation's reforms to collapse. If reforms and liberalization are to continue in an orderly fashion, therefore, elections will have to wait until this 8:4 ratio is reversed. Given that it took twenty-five years for the first 400 million to benefit from the reforms, this process will probably take another twenty to thirty years. But China's external imbalances have already reached the point at which immediate action is required. So while the nation's economic development will doubtless continue, it is also triggering a variety of domestic and international problems.

The senior Chinese leaders I have spoken with demonstrated an excellent understanding of these issues. The people responsible for managing the economy are some of the most capable people in the world—it almost seems as though the quality of the people available at the top is proportional to the size of the pool from which the nation has to draw. In any case, policymaking takes time, both because of the scale of the problems involved and because the State Council must proceed very cautiously for the legitimacy reasons noted. The single most important point in the outlook for the Chinese economy, therefore, is whether the already pressing issue of global trade imbalances will wait for China.

3. Germany's choice under Maastricht

As noted in Chapter 6, the IMF's April 2006 report argued that a resolution of the U.S. trade imbalance would also require trade-surplus nations to behave more responsibly. At present, the world's largest trade surplus belongs neither to Japan nor China, but to Germany. And as noted in Chapter 3, Germany is finally coming out of a balance sheet recession. But the way the country

managed to come out of the recession is not without controversy, especially in the views of its huge trade surplus.

German companies rushed into debt in the 2000 telecoms bubble, and subsequently rushed to pay it down after the bubble collapsed (Exhibit 1-10). In a sense, Germany's situation was more serious than Japan's because the German household sector increased its saving. Greater saving by households coupled with debt repayment by the corporate sector squeezed the German economy from both sides. This is the chief reason the nation's economic performance was so anemic until early 2006.

Although written in English,⁹ my book *Balance Sheet Recession* received more attention in Germany than anywhere else. Deutsche Bank chairman Josef Ackermann read it, and mentioned it in one of the bank's reports, which gave me the opportunity to give speeches at the Bundesbank, Germany's central bank, and at the ECB. At both institutions, we had meaningful discussions about the similarities between the situations in Japan and Germany, and officials were eager to learn from Japan's experience.

Unfortunately, German fiscal expenditures are tightly constrained by the Maastricht Treaty which caps the budget deficits of member nations at 3 percent of GDP regardless of the size of household savings and corporate debt repayment. This inflexibility means Maastricht is fundamentally defective to the extent that it makes no provisions whatsoever for economies in a *yin* phase. But changing the treaty now would be a very difficult political and diplomatic exercise for the member nations.

In the end, German companies responded to the recession by taking advantage of the eurozone's large market and common currency to boost exports to regions with strong economies. Thanks to the common currency and the absence of tariff barriers, a firm with competitively priced products can increase exports within the region virtually without limit. This is how Germany came to achieve the world's largest trade surplus. In less flattering terms, it has pursued a policy of exporting unemployment to surrounding nations. While strictly speaking this is not a beggar-thy-neighbor policy, because the exports are destined for markets using the same currency, the fact remains that Germany has sought to keep domestic labor costs low, and use exports to overcome its balance sheet recession.

This has fueled a heated debate within the eurozone about whether German wages are too low,¹⁰ probably the first time ever

that Germany has been criticized by such countries as France and Italy for having low wages.

I once told an ECB official that if I were Italian or French, I wouldn't stand for this situation. Germany's balance sheet recession was triggered by German companies' participation in the bubble, and the resultant problems should be dealt with inside German borders. I argued that Germany's balance sheet recession should be taken care of with German fiscal stimulus, so that neighboring countries would not have to pay for mistakes made by German companies. In other words, an exception should be made for Germany under the Maastricht Treaty because the original treaty does not consider the possibility of balance sheet recessions.

The ECB official, however, answered that the ECB would not allow such an exception. Now that these countries share the same currency, granting an exception for one nation would be no different than allowing an exception for the state of California in the U.S. He argued that even if heavy Californian "exports" to Nevada and Oregon cause economic problems in the latter two states, very little can be done to the extent that both use the same currency.

While this may be true at one level, conditions in the U.S. and the eurozone are very different. It is easy enough for people to pack up and move between California and Oregon, but not so between France and Germany, which are divided by language. And if many states in the U.S. had fallen into a balance sheet recession, the federal government in Washington would step in and provide fiscal stimulus to offset the resulting deflationary pressures. Europe has no federal government.

A new treaty needed for Eurozone

The best answer for the eurozone would be to except nations *certified* by an authoritative group of experts as being in balance sheet recessions from the budgetary constraints of Maastricht. If anything, Maastricht should *require* these countries to administer necessary fiscal stimulus. This would prevent damage to other economies by requiring countries suffering a balance sheet recession to absorb excess private-sector savings through government spending. If each economy with a balance sheet

recession mobilized fiscal policy to contain the recession within its borders, a eurozone-wide fallacy of composition problem could be averted. A provision like this is particularly important in the eurozone, which has no federal government to counter the problem. The Maastricht Treaty was not designed with balance sheet recessions—the *yin* world—in mind. But it should clearly specify what must be done to prevent problems from spreading to other countries when this rare type of recession does strike.

At the same time, member states must be prohibited from engaging in profligate fiscal policy at all other times. If individual regions within a currency zone are allowed to run a higher deficit at will, the credibility of the common currency will suffer.

The ECB was actually established based on the Maastricht Treaty. Consequently, telling ECB officials that the Maastricht Treaty is defective and in need of revision is seen as casting doubt on the legitimacy of the ECB itself, and is likely to meet strong resistance. But forcing a country or region in a balance sheet recession to balance the budget out of misguided pride or stubbornness will not benefit anyone. Indeed, forcing an inappropriate policy on a nation already suffering from a debilitating recession can actually put its democratic structures at risk by aggravating the downturn.

This possibility is underscored by Germany's experience in the 1930s. As noted in Chapter 5, it was Chancellor Brüning's insistence on maintaining a balanced budget that caused the economy to collapse, and allowed Hitler to come to power. Nothing is worse than a political leader with the wrong political agenda but the right economic policies. Given the unquestioned preference for balanced budgets within both the economic orthodoxy and policy circles such as the ECB, the risk of making the same mistake is no smaller today than in the 1930s. To prevent this risk, the eurozone needs a treaty that is designed to cope with both *yin* and *yang* phases.

4. Preparing the global economy for both *Yin* and *Yang* phases

This problem of cross-border fallacy of composition is not limited to the eurozone but also concerns the broader global economy.

If balance sheet recessions occurred simultaneously around the world, affected countries would have strong incentives to balance their budgets by devaluing their currencies in order to boost exports. The fact that so many academic economists, from Krugman to Eggertsson, argued in favor of bringing the yen exchange rate down when Japan was in a balance sheet recession suggests that similar recommendations will be made for other countries in the same situation. The result, however, would be a global fallacy of composition and deflationary spiral.

Japan's government kept the problem from spreading to other nations during the past fifteen years by administering fiscal stimulus, but there is no guarantee that other countries will do the same. And there is no world government capable of implementing fiscal stimulus for the global economy.

To prevent balance sheet recessions from spreading, therefore, the nations of the world must agree to do as Japan did and take responsibility for absorbing their own excess private-sector savings through fiscal stimulus when they are faced with this type of recession. Such an agreement or framework will prepare the global economy for both *yin* and *yang* phases of the cycle. In the 1930s, no such framework existed, and the balance sheet recession originating in the U.S. plunged the entire world into depression and political turmoil. There is still no such framework today.

Based on the experience of the Great Depression, Keynes recommended the creation of the IMF as a means of preventing global fallacies of composition. Ultimately, however, Harry Dexter White's much milder proposal was finally adopted. This was probably because Keynes, as shown in Chapter 5, lacked a full understanding of the mechanism by which balance sheet recessions are generated.

But there will be more asset-price bubbles, followed by more balance sheet recessions in the future. Indeed, the current subprime crisis is fully capable of developing into a global economic meltdown if not handled correctly. That cross-border capital flows have been liberalized means that the impact of one bubble's collapse will spread to other countries much faster than it did in the 1930s, as we saw during the Asian currency crisis of 1997 or the present subprime fiasco, which started in 2007.

What is needed now is a code of behavior to follow for individual countries when they are in a *yin* phase to prevent the global economy from falling into a fallacy of composition. Japan should take the initiative, because it not only has the most experience in dealing with such problems, but also managed to keep its problems within its borders throughout the fifteen-year ordeal. The IMF should be given the responsibility for administering the resulting framework to avoid a 1930s-like global fallacy of composition. In this regard, the IMF managing director Dominique Strauss-Kahn's dramatic volte-face on January 27, 2008, in favor of a global fiscal effort to fight a subprime induced recession is extremely encouraging. What is needed now is to bring in the concept of the balance sheet recession and make the distinction between this type of recession and the ordinary recessions so that fiscal policies are mobilized only during the *yin* phases and not during the *yang* phases.

ENDNOTES

1. Bloomberg (2004).
2. Wolf (2007), in the *Financial Times*, December 12.
3. This section is taken from Koo (2003a) pp. 170–1.
4. Ingves (2002).
5. For more details on the Latin American debt crisis, see Koo (2003a), pp.126–36.
6. See Tanaka (2006), p.10.
7. For example, see *Financial Times* (2008).
8. Calculated by NRI based on Japan Real Estate Institute's Urban Land Price Index.
9. Koo (2003a).
10. Issing et al. (2006).

Appendix: Thoughts on Walras and Macroeconomics

1. Neoclassical economics has overlooked the reason for money's existence

Why are some economists so willing to advocate unorthodox monetary policies such as the use of “helicopter money?” I believe part of the answer lies in an underappreciation of money by the school of neoclassical economics, which never fully grasped the reasons for money's existence in a society. After all, the original structure of neoclassical economics as put together by Walras had no money in it. The concern over this under-appreciation of money actually has a long history, as pointed out by Kenneth Arrow in 1967.

Arrow said that neoclassical economics has three “scandals” to resolve: its inability to integrate micro- and macroeconomics, its nonincorporation of imperfect competition, and its non-incorporation of transaction costs, which are essential both to the theory of money and to asset holding theory in general. Much has been written about these three issues during the past forty years. Previous Chapters have also touched upon the issue of the micro-foundation of macroeconomics. But I believe that a key unifying theme is still missing from the discussion. The purpose of this section is to show that all three shortcomings stem from the discipline's lack of appreciation of the implications of *division*

of labor, which have made possible such huge gains in human productivity. These three scandals are not only closely linked, but are significant enough to cast doubt on the validity of many key aspects of modern economics.

Money as a medium of exchange

It is well known that neoclassical (or Walrasian) economics is an economics of barter in which all goods serve as perfect money.¹ It is also known that money reduces frictions within the economy. But attempts to incorporate friction-reducing money into the neoclassical economic framework have not been particularly convincing or successful. In particular, the nature of the “transaction costs” and “accounting costs” said to be the reasons for money’s use was never well specified. This section clarifies the nature of these transaction costs, and explores why it is difficult from a theoretical perspective to incorporate the use of money into the basic neoclassical framework.

Money is said to have three functions: a medium of exchange, a store of value, and a unit of account. Previous authors have noted that as a unit of account, money reduces the number of prices in an n -good economy from $n(n-1)/2$ to $n-1$. For example, in a five-good economy, there are potentially ten prices between goods A to E: AB, AC, AD, AE, BC, BD, BE, CD, CE, and DE. But once people agree to use A as the unit of account, there will only be four prices: AB, AC, AD, and AE. Because it is much easier to keep track of four prices than ten, the use of money is said to have made people’s lives better. This much is taught in every economics text.

But this still leaves $n-1$ prices for people to keep track of. In a highly advanced economy, with millions of differentiated and intermediate goods, even the task of knowing $n-1$ prices is extremely burdensome, if possible at all. This is where the function of money as a medium of exchange comes in, as distinct from its role as a unit of account. The function of money as a medium of exchange is to allow people to function while knowing only a *small fraction* of the $n-1$ prices in the economy.

All goods have two prices

To understand the function of money as a medium of exchange, it is useful to analyze the nature of the cost involved in a barter

exchange. To the extent that any good has the potential to serve as money, we can think of all goods as having two prices. One, which we shall call V_r (r for retail), is the price we are all familiar with—that is, the market or retail price. The other price, which we can call V_{ex} (ex for exchange), is the good's value as a medium of exchange. The following example illustrates how V_{ex} is determined.

Suppose A, who happens to be out of cash, offers B an Icarex² in exchange for an old set of furniture. If B actually wants an Icarex, the trade is consummated without difficulty, because there exists what economists call a “double coincidence of wants.”

But even if B does not want an Icarex, the trade can still be consummated if she believes she can resell the Icarex to C who has been looking for it, and obtain the sum of money that is more valuable than her old furniture. In other words, if B is convinced that she cannot go wrong with the price she is paying for the Icarex (in furniture terms), the barter exchange will be consummated *without* a double coincidence of wants.

In the two examples presented, either B wanted an Icarex herself, or had no use for it but knew C who wanted one. In other words, B's knowledge of the Icarex's V_r played a key role in making the two barterers possible.

But a problem arises if B knows nothing about the value of the Icarex being offered. In this case, the seller of an obscure item must either be prepared to accept a very low V_{ex} for it, or try to educate the uninformed barter partner and convince her of its V_r . This educational process is costly, because it takes both the buyer's and the seller's time. Because the buyer can expect similar difficulties when she attempts to resell the Icarex, the V_{ex} value of the Icarex will not easily rise. Therefore, we may conclude that the V_r of a good is its relevant price among knowledgeable producers, buyers, and sellers, whereas V_{ex} depends on, among other things, how well the good's value is known by the general public.

Why money exists

In a modern economy with millions of differentiated goods, the gap between V_r and V_{ex} is so large for so many goods that if they had to be sold for their V_{ex} values, the losses would be truly astronomical. This is why money must be introduced as a medium

of exchange. Using a medium of exchange is the act of substituting a good whose value is widely known for one whose value is not widely known. By introducing a third good with the property $V_r = V_{ex}$, all owners of obscure goods (e.g. an Icarex) can avoid the loss ($V_r - V_{ex}$) that would be incurred in a barter exchange.³

More precisely, the gap between V_r and V_{ex} is so large for most goods that it pays for the seller to seek out a knowledgeable buyer willing to pay V_r for a good with money (which satisfies the condition $V_r = V_{ex}$), and use money for the final purchase. This much is also written in any textbook explaining the concept of a medium of exchange.

But the most important contribution of the medium of exchange is really the converse of this: it allows people to operate by knowing only a small fraction of $n-1$ prices in the economy. When a good with the property $V_r = V_{ex}$ is introduced, both the frequency of barter exchanges and the probability of an obscure item such as an Icarex appearing in such an exchange are virtually eliminated. Those with no interest in Icarexes are therefore *spared* the need to know what an Icarex is, or what it is worth. The medium of exchange thus frees people from the *burden* of knowing all $n-1$ prices at all times, and allows them to get by with knowing the prices of only those goods they are interested in. Indeed, people's knowledge of prices at any point in time is often limited to the price of goods in their fields of specialization, rents, salaries, commuting costs, and the price of a favorite lunch menu.

The reduced burden, in turn, enables people to redirect the resources required to know the prices of $n-1$ goods to more productive activities. "Resources" here refer to the time and brain cells available to human beings, and "more productive activity" refers to the specialization and division of labor that have so dramatically lifted human productivity.

Specialization and money

Humans became aware centuries ago that it was possible to increase individual productivity sharply through specialization and the division of labor. Once they moved away from a self-sufficient lifestyle to specialization and division of labor, however, there was an inevitable and progressive increase in the variety

of goods being traded. In other words, specialization and the division of labor produced the need for a medium of exchange in the first place by reducing self-sufficiency, and forcing people to trade more with each other and in a wider range of goods.

This means that in an economy with money, there is division of labor with a specialized workforce, and the number of prices known by members of the public at any point in time is just a tiny fraction of the $n-1$ goods in the economy.

Requirements of a medium of exchange

Before we get into the theoretical implications of these two characteristics of economies with money, it would be useful to review the question of how neoclassical economics functions without money. For every good to serve as “perfect money,” every good must have the quality $V_{ex} = V_r$. But for this condition to hold, everyone in the economy must know the market clearing price of every good at all times. It would not be enough for consumers to know just the prices of the few items they are interested in. For all goods to function as perfect money, everyone would have to know the V_r price of *all* $n-1$ goods at every point in time.

This is nothing new, of course. For in a neoclassical world, it is assumed that a Walrasian auctioneer informs every agent in the economy of the market clearing price of every good at all times. (It is also assumed that these agents will continuously inform the auctioneer of their demand schedule for all goods and services in accordance with the latest set of prices announced by the auctioneer.) Furthermore, the auctioneer assures each participant that every other participant is also aware of the market clearing price of every good at all times.

If these conditions are met, inconsistency between V_r and V_{ex} can be eliminated for any good in any trade. Both sides of the trade will be directly aware of the V_r value of the Icarex as announced by the auctioneer. Because the recipient of an Icarex in the present trade can also count on the same hassle-free agreement on the value of Icarex when she resells it in the near future, there is no reason not to accept the Icarex in trade for the old furniture set. Thus, the neoclassical idea that every good can function as money is a logical outcome of the cost-less Walrasian information system, which eliminates any possibility of valuation disagreements among traders.

In a neoclassical framework, where perfect information is freely available, it obviously makes no sense to include money as a medium of exchange in the utility function, or anywhere else in the model for that matter. In this setting, only a unit of account—which requires no physical embodiment—is needed. Walras, for example, does not introduce money in his analysis, and uses only a unit of account.

Needless to say, the assumption that $V_r = V_{ex}$ for all goods is an extremely strong one. Only in a very primitive world, with just a handful of traded goods, could we expect all traders to be aware of the current price of all goods. In a highly developed economy, with millions of intermediate and specialized goods, the information cost of making $V_r = V_{ex}$ hold for every good would be truly astronomical. That would require every individual in the economy to input his demand and supply of all (i.e. millions of) goods to the auctioneer every second. Because the amount of time and the number of brain cells available to individuals and to society as a whole are limited, any attempt to make everyone know every price at all times would cause the economy itself to cease functioning.

In contrast, in an economy with money and a highly developed division of labor, people know the prices of only a fraction of all goods, and “perfect information” in the neoclassical sense does not exist. In this economy, the existence of a good that minimizes the loss equal to $V_r - V_{ex}$ clearly increases utility. In other words, people hold money because it preserves the V_r value of their other goods and services (if they were caught short of money, they would have to barter off their possessions and time, and incur large $V_r - V_{ex}$ losses in the process). Money, therefore, should be included in the utility function of a person who wants to specialize in a trade instead of pursuing a completely self-sufficient lifestyle.

In a world of imperfect information, people will hold transaction balances until their marginal utility (in terms of expected avoidance of $V_r - V_{ex}$ losses) equals the marginal cost of holding them (in terms of the utility forgone by not having the goods that could have been purchased with that money).

Inflation, deflation and Monetary Policy

The marginal utility of holding money in turn depends on the relative attraction (or utility) of the $V_r = V_{ex}$ property of money

vis-à-vis other goods. In remote parts of the world where no one recognizes the U.S. or Japanese currencies, for example, Icarexes may well have smaller $V_r - V_{ex}$ losses than dollar bills. People entering these areas may want to carry more Icarexes or similar items than dollar bills.

In addition, this $V_r = V_{ex}$ property of money can no longer be taken for granted when there is inflation or deflation, and prices are no longer stable. In times of inflation, for example, people will tend to hold less money and more of other goods, while during times of deflation, the opposite is likely to be true. In either case, the need to make this adjustment reduces the time that people can devote to their field of specialization. To the extent that the increased productivity of the human race is caused by the division of labor and specialization, inflation and deflation, by diverting people's attention away from their area of specialization, lower overall economic productivity, and may actually cause the economy to shrink. For example, if inflation concerns prompt an engineer engaged in R&D to think about buying real estate or some other asset to protect himself, the amount of attention (and brain cells) he can deploy to his engineering work diminishes. This is why price stability is the most desirable state of affairs.

More precisely, both time and brain cells are limited commodities, and the amount of time and brain cells available for specialization and division of labor will be reduced by the amount of time and brain cells required to know and follow the prices of goods outside the area of specialization. This is true for a person as well as for a society.

From this perspective, it could be said that the best monetary policy is the one that allows people to operate while knowing the *fewest* prices outside their area of specialization. Any deviation from that will reduce the degree of specialization people can attain, thereby reducing their productivity.

The use of money and imperfect information are inseparable

It should be noted that the use of a medium of exchange does not solve the problem of imperfect information; it merely alleviates part of the problem. It is obvious that purchasing a furniture set with money instead of an Icarex does nothing to improve the

furniture seller's knowledge of Icarexes. The buyer uses money instead of the Icarex precisely because the furniture seller cannot be expected to know the latest V_i for Icarexes.

More importantly, by knowing far fewer than $n-1$ prices, people who specialize in their own fields of expertise constantly run the risk of missing developments in other markets that may have an important bearing on their well-being. In effect, they have committed themselves to partial equilibrium solutions in a world of imperfect information, which carries the risk of being wrong (and often results in unemployment or bankruptcy) when the limited information used in the original partial equilibrium analysis turns out to be incorrect or no longer relevant. If someone discovered how to make perfect economic forecasts using a new kind of artificial intelligence or a crystal ball, many economists would suddenly lose their jobs. Those who study economics today are implicitly assuming that such a crystal ball will never be developed. If wrong, they will eventually find themselves out of work. So they watch the news, trying to inform themselves of developments outside their specialty, and prepare for the unexpected. But it is impossible to eliminate this risk altogether because the real world is far too complicated for anyone to know everything necessary to reach a general equilibrium solution.

Furthermore, that people are acting in a state of partial equilibrium means that information flows between individuals are slow, incomplete, and often inaccurate. Consequently, participants in the Icarex market need time to react (through income and substitution effects) to changes in the furniture market. Their delayed and often confused reactions are fed back to the broader economy through changes in the price of the Icarex, perpetuating the disequilibrium trading conditions. Consequently, the use of money does not bring the economy any closer to Walras's world of perfect information.

In this respect, note that in a Walrasian "general" equilibrium analysis, the number of equations or goods in the model has no qualitative impact on the outcome of the model—that is, it does not matter whether the model contains two equations with two unknowns or 2,000 equations with 2,000 unknowns. In the real world, however, it does matter whether there are two traded goods or 2,000 traded goods, because of the vast difference in the cost

of information between a two-good and a 2,000-good economy. This casts doubt on the applicability of Walrasian laws and the Walrasian equilibrium approach when analyzing an economy with money.

Because most macroeconomic models have only a few goods (most contain only one), the question whether they have a meaningful role to play in macroeconomic analysis should be carefully considered. After all, macroeconomics was created after the Great Depression as a separate discipline from the Walrasian general equilibrium models taught in microeconomics because people wanted to understand the bankruptcies and unemployment that result from imperfect information. But imperfect information is inconsistent with a one-good model.

General equilibrium under incomplete information and partial equilibrium under complete information

This brings us to the topic of the well-known intellectual gap between Walrasian microeconomics and Keynesian macroeconomics noted by Arrow. From the preceding discussion, it is clear that the difference between a monetized economy and a Walrasian economy is the cost of information/specialization. Macroeconomics, which deals with unemployment and the use of money, is really dealing with the aggregate behavior of a vast number of heterogeneous individuals who are poorly informed of developments outside their field of specialization. Microeconomics, on the other hand, generally limits itself to the study of well-informed participants in one market, taking all other outside factors as given. At the heart of what Leijonhufvud (1968) called the schizophrenic division between Keynesian macroeconomics and Walrasian microeconomics lies a fundamentally different paradigm: whereas microeconomics is basically partial equilibrium analysis under full information, macroeconomics is general equilibrium analysis under partial information. Although microeconomics can be studied in general equilibrium framework, macroeconomics with perfect information is realistic in analyzing unemployment and use of money.

The two approaches are identical when every agent in the economy knows the price of all goods at all times. The long-awaited synthesis of micro- and macroeconomics, therefore, must take into account qualitative differences in the behavior of economic agents brought about by their narrow specialization and the resultant imperfection of information.

2. Welfare implications of the use of money

Comparison with a barter economy

With the preceding analysis, one may be tempted to analyze the welfare gain from the use of money in terms of the total net $V_r - V_{ex}$ lost in exchanges in a barter economy versus the exchange-related losses associated with a fully monetized economy. The question, however, is not so simple. To see this, consider economists' "shivering baker and hungry tailor" illustration of the barter exchange.

First, it should be noted that it is largely because the economy has money that the tailor can specialize in tailoring and the baker in baking. The baker in the tale is shivering because he mistakenly thought he could afford to make a living by knowing only baking. The same holds true for the hungry tailor. Had they known in advance that they would have to live in a barter economy, it would have occurred to them that it would not be wise to specialize so narrowly. The tremendous cost associated with each barter exchange would have persuaded them to become more self-sufficient, thereby minimizing the need to enter into these trades.

Increased self-sufficiency in a wider range of goods means de-specialization and a consequent fall in individual productivity. An economy-wide fall in individual productivity, in turn, translates to a shrinking economy. The disappearance of many goods from the market due to de-specialization also affects the demand and supply of all remaining goods. In other words, money cannot be neutral. The statement by John Stuart Mill (1857) that "things which by barter would exchange for one another will, if sold for money, sell for an equal amount of it" is incorrect, because many goods or services will neither be produced nor sold in the fully de-specialized barter world. There is also no assurance that the

current population can be supported under the far less productive barter exchange regime. Therefore, the composition and number of not only goods but also participants in the economy will change.

To measure the welfare gain from the use of money, therefore, it is necessary first to determine the level of specialization the use of money is supporting. This is not an easy matter, because there are other goods that can substitute for money—cigarettes, for example—if inefficiently. If no medium of exchange is allowed at all, the economy (and population) may shrink dramatically as a result of two types of costs. First, high transaction costs will prompt people to return to self-sufficient lifestyles. Second, the enforcement costs needed to prevent people from using cigarettes or other money substitutes as a medium of exchange will be enormous.

Price and wage stickiness and rigidity are rooted in the division of labor

This division of labor and specialization is also behind the price and wage stickiness emphasized by the Keynesians and New Keynesians. Specialization means that the labor market does not consist of a single type of worker L , but rather of several hundred types of workers $L_1, \dots, L_n$, each focusing on one area. In an advanced economy with a highly developed division of labor, not only the goods market but also the labor market become segmented. Businesses gather people with different specialties and skills, and arrange them in a way best suited to the production of their products and services.

This means that a typical production line will include many different L s working in a mutually *interdependent* environment. Because of this interdependence, the value of the final products (or service) each worker is entrusted with per hour will far exceed his or her hourly income.

In a factory producing automobile engine blocks, for example, a plant worker may be paid \$20 an hour for his or her labor, but the value of the product he or she is handling each hour will be several hundred times that amount. After all, if there was a problem with the employee's work and the cars he or she helped to build had to be recalled later, the company would incur huge losses and see its reputation suffer. Similarly, a poor or rude response to a client by

an employee in a service industry can cost the company business that may be worth many times the employee's wage.

In environments such as this, in which each worker has a unique specialty, and products and services are put together in a mutually interdependent process, the concept of marginal productivity of labor in the neoclassical sense no longer applies. Companies must view their employees as a *single team*, and do everything in their power to weed out behavior that could disturb the team's cohesiveness, and lower the quality of the products or services being offered.

This is why many companies prohibit employees from disclosing their salaries to other workers, and why they do not accept offers from outsiders to work for less. This is also why wage negotiations and layoffs either involve all employees, or affect everyone in a given plant or production line.

The key here is mutual interdependence. Highly specialized workers whose productivity is not dependent on the teamwork of colleagues, such as lawyers, accountants, or even teachers, are subject to more competitive market pressures than those who must work as a member of a team. Even in the case of individual contracts, employers cannot change wages at will if it would cause the morale of the whole team to suffer. These concerns necessarily slow down the wage adjustment process.

In contrast, the Walrasian neoclassical model assumes that when an excess supply of labor leads to unemployment, labor market conditions will loosen, wages will fall, and the unemployed will be hired. It is supposed that unemployed workers from outside the company will offer to work for less than existing employees, and that this competition will prompt a downward adjustment in wages, eliminating unemployment. This adjustment may be possible at a workplace characterized by a low degree of mutual interdependence between employees, but it would be unthinkable at a modern workplace with an advanced division of labor and a high degree of mutual interdependence. In the latter case, rapid downward wage adjustment could occur only if the entire team agreed to it, or if some employees retired and had to be replaced. In either case, the process would unfold gradually. This production floor reality is the source of the wage rigidity cited by the Keynesians and New Keynesians.

Choosing between mathematical convenience and factory floor reality

In the end, the answer to many of these questions—why people use money, why unemployment exists, and why wages do not adjust immediately in response—can be found in the modern system of production, which is characterized by an advanced division of labor and a high degree of mutual interdependence.

Neoclassical economists, assuming perfect information and seeking mathematical convenience, omitted from their models the division of labor and mutual interdependence. Everyone else in the society, however, sought higher productivity, so they abandoned perfect information and adopted a division of labor. As a result, the discipline of economics became dominated by mathematics to a degree that surprises even some physicists. Although it won for itself a mantle of respectability as a *science*, it lost the ability to explain such simple phenomena as the use of money or the existence of unemployment.

In contrast, society as a whole has benefited from dramatic improvements in productivity through specialization, and has built an economy of plenty, despite periodic bouts of unemployment and business failures due to imperfect information. Some of this bounty has even been used to pay the economists' salaries. But for the discipline of economics to be of value to society, economists must have the courage to face reality, even if it means abandoning some of their beloved mathematical gymnastics. An economics based on the assumption that there is only one type of labor, one good, and perfect information is essentially assuming away all the problems whose solutions people seek from it.

3. Conclusions

People will continue to seek a medium of exchange to minimize exchange losses as long as $V_r \neq V_{ex}$ for many goods. Money's role as a bridge between two or more exchanges is essential in a modern economy characterized by imperfect information, specialization, and the division of labor.

In a true Walrasian moneyless society, $V_{ex} = V_r$ for all goods, and no one needs to go through a medium to complete an exchange. But in the real world, with millions of specialized

and intermediate products, just to be able to identify a particular good, to say nothing of how much it is worth, requires a great deal of specialized knowledge. For example, it takes considerable experience to tell whether an Icarex is in good working order. It takes even more to know how much a nonworking Icarex is worth and which camera shop in town can repair it. In short, the assumption that everyone in the economy knows the prices of all goods at all times is equivalent to saying that the cost of specialization, which has enabled such tremendous increases in human productivity, is zero.

It is no wonder that the integration of money into a neoclassical framework has been so difficult to achieve: neoclassical economics is fundamentally incompatible with the most important function of money, which—as a medium of exchange—is to free people from the need to know the V_r price of $n-1$ goods at all times. Money exists because the real world is fundamentally nonneoclassical. Money and Walras do not mix.

ENDNOTES

1. See Niehans (1978), p. 3.
2. A brand of camera.
3. The property $V_r = V_{ex}$ of a medium of exchange also makes it an excellent store of value.

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